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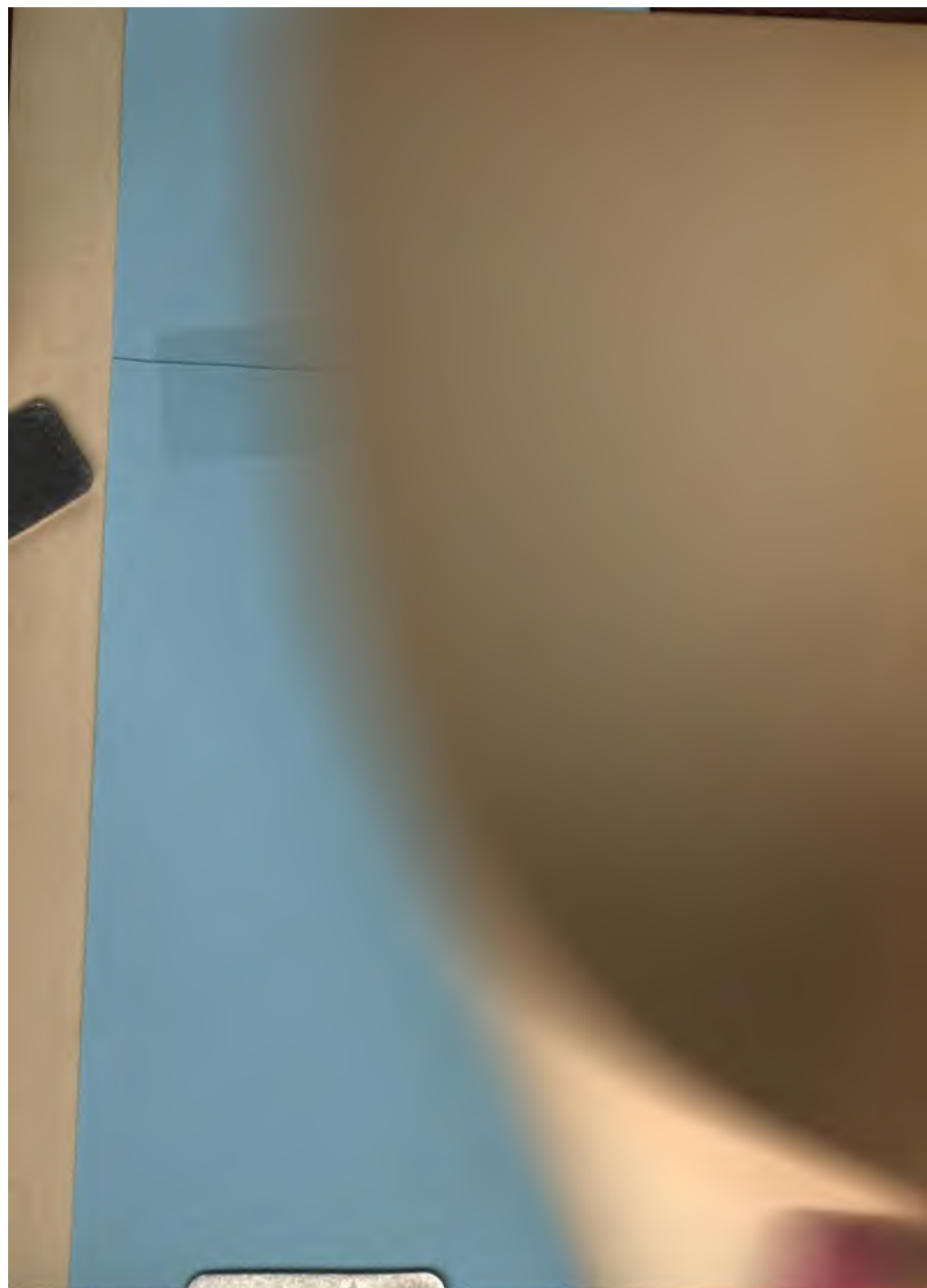
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Revised and Enlarged by the Author in 1900.

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NEW YORK:  
MURRAY HILL PUBLISHING COMPANY, 129 EAST 28TH ST.  
1904.

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ENTERED AT STATIONER'S HALL, LONDON, ENGLAND.**

**PRINTED BY O. H. LABARRÉ, 100 E. 20TH ST., N. Y.**

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## PREFACE.

For the fourth time I make my bow to a generous public. For the fourth time I serve to my patrons a dish of what I term medical common sense. The book entitled "Medical Common Sense" had its birth in 1858. It was a volume of about 300 pages and less than one hundred illustrations. When it first made its appearance some of my prudent friends shook their grave heads, and predicted for the author pecuniary failure and professional disgrace. Like those of many other prophets, their predictions proved to be only croakings, and the expected martyr soon found himself surrounded by hosts of new friends and swarms of new patients. While awaiting the popular verdict, after the first issue, one of the oldest and most noted clergymen of New York called at my office for the express purpose of assuring me how much he was pleased with the publication, and his appreciation possessed greater value to me because he had studied medicine in his youthful days, with the view of fitting himself for practice. He pronounced "Medical Common Sense" a refreshing contribution to medical literature, and expressed a hope that it would obtain a large circulation. I breathed easier, for the splendid physique, generous countenance, cultivated manner and commanding presence of the first juror gave to his encouraging words the color and impressiveness of authority, and I almost felt as if the popular verdict had already been rendered.

It is many years since this noted man passed to the "great beyond," at the ripe age of eighty-six. The *New York Evangelist*, in its obituary notice, said: "So ends a long and distinguished public career. So passes away one of the great men of a former generation. His name has been a household word for half a century. In the Presbyterian Church he stood in the very front rank. \* \* \* By his great power he made his influence felt in every sphere in which he moved. \* \* \* His commanding presence, ready tact, and powerful utterance combined to make him in deliberative and popular assemblies a leader of men." These brief quotations are made to show what manner of man this clergyman was who endorsed a popular medical work which broke away from orthodoxy in medicine and opened up new paths for those who were groping in the wilderness of doubt and uncertainty, vainly looking for hope and relief from chronic physical ills. The youthful author was barely twenty-nine years of age; the clergyman in the "glory of his ripe manhood." It can be well imagined that any misgivings as to how the volume would be received gave way to confident expectation; nor was this feeling delusive, for, as the book continued to circulate, letters came in daily, like the droppings of the ballots on election-day, from intelligent men and women in all parts of the country, thanking me for the information I had presented in language which could be comprehended by the masses of the people. The appreciation of the latter was attested by the fact that between 1858 and 1869 over two hundred and fifty thousand copies were sold, a circulation which I venture to affirm had been attained by no other medical work of like size at that time in the same limited period in this or any other country. Perhaps one of the most striking evidences of its popularity is the fact that two or three other medical book-makers imitated this taking title with just sufficient variation to evade the statutes protecting original authors.

My correspondence with the people often exceeded one hundred letters a day, and the personal experiences and observations confided to the author enabled me to form some conception of the popular needs, and to supply still further physiological instruction so greatly demanded to make mankind healthy and happy. Hence my second revision, made in 1870, with the title of "PLAIN HOME TALK, EMBRACING MEDICAL COMMON SENSE," a book containing nearly 1,000 pages and over 200 illustrations. In this revision it was my aim to answer, as nearly as possible, all the questions that had been put to me in the intervening years, and to recommend such measures for individual and social reform as I thought would prove morally and physically beneficial. To fulfil my duties in these respects could not make a volume suited for the centre-table, nor yet a work that should find place on some obscure shelf. The medicine closet or family library seemed to me to be an appropriate place for the book. Time proved that this venture was not without success. Mrs. Elizabeth Thompson, the noted philanthropist and reformer of that time, called upon the author to express her pleasure on reading the work, and purchased fifty copies to give to her friends. Meeting the well-known veteran litterateur and traveller, the late Stephen Massett, at a banquet in New York, he remarked: "I have met your remarkable work in every clime I have visited—even in far-off South Africa." Fully half a million copies have been sold, and still it meets with public appreciation, as is evidenced by the fact that the publishers print an edition of about fifteen or twenty thousand every year. It has been translated into the German language, and has found thousands of readers in the German Empire. The title of the German edition is "Offene Volks-Sprache."

After the lapse of more than a quarter of a century, with a third and fourth revision, this new book, printed on fresh electrotypes, appears with three hundred and thirty-one illustrations, many of them entirely new, eight additional colored plates, a *copious Index*, and not less than five hundred pages of new matter, which could not have found place in this already bulky volume, but which it has not been put in smaller type. It is a remarkable fact that "Plain Home Talk" was so far in advance of the times when published (some said fifty years ago) that it is not now necessary to "write it up to date." It has been like a perpetual almanac from the moment it was first issued. A correspondent, a well-known horticulturist of Michigan, recently wrote: "Is Dr. Foote, the one who wrote 'Plain Home Talk,' still living? Does he know that many of his notions and sociological deductions have become popularized since 1837—since 1870?" Little that is new can be added; but many of the reforms advocated in the volume have been accomplished, and the essays devoted to them can be made conformable to the changes which have taken place. It can be freshened up a little with new dates and with observations on some of the remarkable advances in the domain of hygiene and medicine. A step still in advance of the times can be taken here and there, and it has been taken, as the reader will see.

There are portions of the Preface appearing in my first volume which I will reproduce here with some slight alterations and additions. "Common sense," I said, nearly forty years ago, is quoted at a discount, especially by the medical profession, which proverbially ignores everything that has not the mixed odor of incomprehensibility and antiquity. Medical works are generally a heterogeneous compound of vague ideas and jaw-breaking words, in which the *dead languages* are largely employed to treat of *living* subjects. Orthodoxy in medicine consists in walking in the beaten paths of *Æsculapian* ancestors, and looking with grave contempt on all who essay to cut out new paths for themselves. Progress is supposed to be possible in everything except medicine; but in this science, which all admit has room for improvement, the epithet of "Quack" is applied to every medical discoverer. I trust I may prove worthy of the denunciations of the bigoted. This work is written for the amelioration of human suffering, and not for personal popu-

## PREFACE.

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larity. To uproot error and do good should be the first and paramount aspiration of every intelligent being. He who labors to promote the physical perfection of his race; he who strives to make mankind intelligent, healthful, and happy, cannot fail to have reflected on his own soul the benign smiles of those whom he has been the instrument of benefiting.

My object in preparing this work is to supply a desideratum which has long existed, *i. e.*, a medical work, reviewing *first causes* as well as facts and ultimate effects, written in language strictly mundane, and comprehensible alike to the lowly inmate of a basement and the exquisite student of an attic studio; and if successful in fulfilling the promise of the title-page, I have too much confidence in the intelligence of the masses and the erudition of the unprejudiced scholar to believe that it will be received with unappreciation or indifference. Many of the theories which these pages will advance are certainly new and antagonistic to those popularly entertained, but it does not follow that they are incorrect or unworthy the consideration of the philosophical and physiological inquirer. They are founded upon careful observation, experiment, and extensive medical practice, and if the truth of the theories may be judged by the success of the latter, then do they unmistakably possess soundness as well as originality, for living monuments to the skill and success of the author have been and are being daily raised from beds of sickness and debility in every part of the world. If these remarks sound boastful, be not less ready to pardon the conceit of a successful physician than that of a victorious soldier. The successful military chieftain is notoriously conceited; is it not as honorable and elevating to save life as to destroy it? If a man may boast that he has slain hundreds, cannot his egotism be indulged if he has saved the lives of thousands? I shall claim the soldier's prerogative, for when medical charlatans of every street-corner are blowing their trumpets, it does not behoove the successful physician to nurse his modesty. What I write, however, shall be written in candor, and with an honest intention of enlightening and benefiting humanity.

How far the heads of families may be willing to allow it to circulate among the younger members, it must be left for them to determine; but, if intelligent parents had had my experience they would place this book in the hands of all children who are capable of being interested in it. In other words, they would take no pains to conceal it from children of any age, because only those who understand it will become interested, and all possessing this degree of comprehension are liable to obtain erroneous and injurious information upon the same topics through impure and corrupting channels, though much care be exercised to prevent it. This is a fact which a large correspondence with young people has impressed upon the mind of the author, and would command the earnest attention of all parents and guardians, if they possessed the means of knowing what the writer does. I have received enough lamentations from the young of both sexes, resulting from their indiscretions, to fill these pages, and many of their letters do not hesitate to charge their parents with cruel neglect in keeping from them a knowledge of such vital importance. If this work is adjudged unsuitable, may be other works can be found that will answer the purpose, although I doubt if there is another book wherein the relations of all the organs of the system to each other, and those of the moral nature to the physical body, are more faithfully traced. For the adult this work contains information which no man or woman can afford to do without, when it may be obtained at a price so comparatively trifling. If the physiological deductions and social views of the author be not accepted the valuable facts upon which they are based remain, and the reader is at liberty to use them to sustain opinions and suggestions which he may adjudge more acceptable to the popular mind. Anything, everything—that the human family may grow wiser and happier.

E. B. F.

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## EXPLANATORY NOTE.

If the reader find any references in this work to Parts III. or IV., or to pages beyond 803, he will bear in mind that these are to be found in the companion volume to this, entitled,

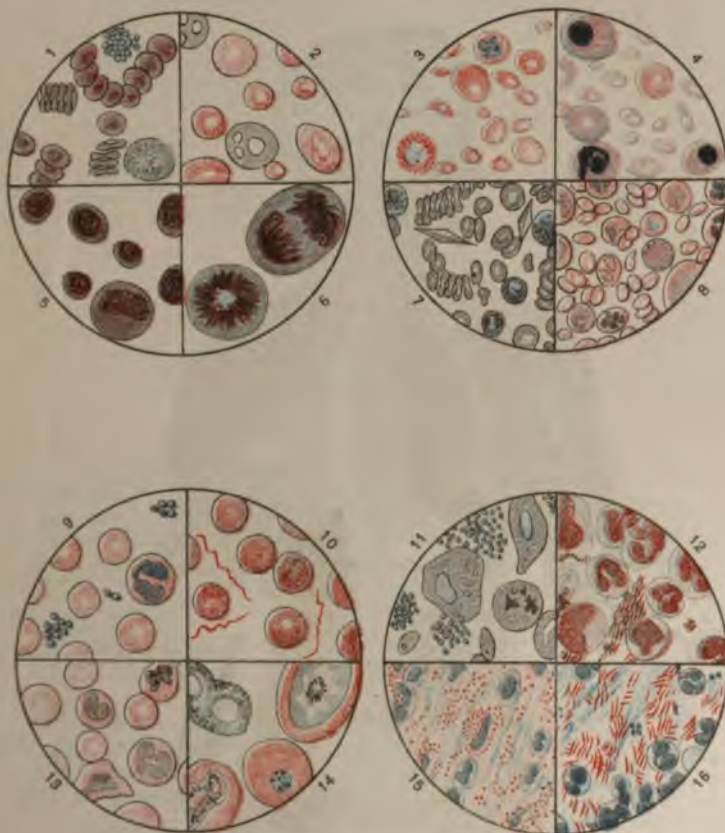
## DR. FOOTE'S NEW PLAIN HOME TALK,

a book of about the same size as this, containing Dr. Foote's last writings on the subjects of love, marriage, parentage, or human social and marital relations in all ages and countries. In the back of *this* book, beginning on page 1218, may be found the *Index* of the *other* book, there placed in order to show the scope and contents of the companion volume, so far as it is made up of Dr. Foote's writings; and on the next to the last advertising page of this book, is given a brief synopsis of the further contents of the *other* book, the last half of which is "Toecology for Mothers" by Dr. Westland, edited for America by E. B. Foote, Jr., M.D.

# PLATE I.

P. H. T. PART I. CHAP. I.

BLOOD DISEASES.



MICROSCOPE VIEWS OF BLOOD AND SPUTUM, ENLARGED 350 TO 1,500 TIMES; MOSTLY STAINED BY CHEMICAL DYES NECESSARY TO BRING OUT DIAGNOSTIC POINTS.

1. NORMAL BLOOD CORPUSCLES.
2. ABNORMAL, IN ANAEMIA.
- 3, 4. IN "PERNICIOUS ANAEMIA."
5. WHITE CORPUSCLES, STAINED.
- 6, 7, 8. " " IN LEUKEMIA, "THE WHITE-BLOOD DISEASE."
- 9, 10. PYAEMIA AND RELAPSING FEVER.
11. NASAL CATARRH MUCUS.
12. DIPHTHERIA MICROBES.
- 13, 14. BLOOD IN MALARIA.
15. SPUTUM OF ASTHMA.
16. SPUTUM OF PHTHISIS.



BY PERMISSION OF THE CHART OF LIFE CO.

BACK AND SIDE VIEW OF CENTRAL NERVOUS SYSTEM, THE BRAIN AND SPINAL CORD, SHOWING ALSO THE GANGLIONIC OR SYMPATHETIC NERVOUS SYSTEM, AND THE LOCATION OF THE VITAL ORGANS.

THE SMALL FIGURE, AT THE RIGHT, IS A MICROSCOPIC VIEW OF A NERVE CELL AND PROCESS (A NEURON), AND FIBRE WITH ITS SHEATH.



# PART I.

---

## Disease: Its Causes, Prevention, and Cure.

---

### OPENING CHAPTER.

#### DISEASE AND ITS CAUSES.

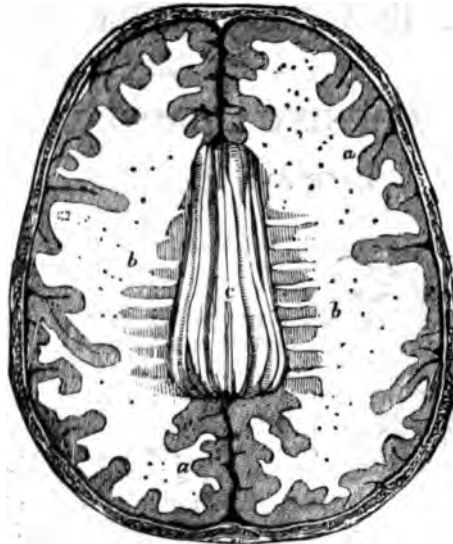


OUR planet with each revolution carries a huge load of human suffering, a large portion of which arises from disease. We see this enemy in the cradle, distorting the features and bedimming the eyes of innocent babes. Too often it carries its little victims to the burial-ground, bathed with the tears of mothers. We see it in youth-hood, arresting the physical development of young men and young women; consigning them to premature graves, or moving them like sickly shadows through years of hapless life. It rudely grasps people in the prime of life, and hurries them away from fields of useful labor to wearisome chambers, where the mind, which has been schooled to activity, becomes a dangerous ally to the enemy by chafing and fretting in its imprisonment. It lays violent hands on our gray-haired fathers and mothers, who yesterday greeted us with the smile, animation, and elasticity of youth, but who to-day go groping about with rounded shoulders and trembling steps. At last, it arrests the physical functions, the outer shell returns to its original dust, and the inner, living body, enters the new life, where—may we hope—this fearful disturber of our comfort and happiness is refused admission.

### The Causes of Disease.

Disease of every character, except that which may be induced by poison or by accident to body or limb, originates in a derangement of the circulation of vital electricity, disturbance of the mind, or an abnormal condition of the blood. Wherever it begins, unless speedily checked, the whole system is soon convulsed in its grasp, because of the close relationship existing between the various organs of the body. Those who have neglected the study of Physiology, as well as all who

FIG. 1.



CAPITOL OF THE NERVOUS SYSTEM.

The above represents a horizontal section of the brain and bones of the skull ;  
*a a*, outer layer of ash-colored matter ; *b b*, the white or internal  
 substance of the brain ; *c*, the corpus callosum.

have merely scanned the pages of ancient and modern superficial writings, will not readily comprehend the truth of these propositions. The most illiterate men of the civilized world are aware that they have a brain (however barren of idea), and that their bodies have nerves, arteries, and veins. But few physicians, especially of the old prejudiced school, know the real offices of them. Doctors who have brandished scalpels in the dissecting-room can point out the exact locality of every nerve, vein, muscle, tendon, etc., but the means by which each per-

forms its appropriate part, seldom awakens curiosity. Turn to a medical dictionary for a definition of the brain; the learned physiological lexicographer says: "The use of the brain is to give off nine pairs of nerves and the spinal marrow, from which thirty-one pairs more proceed, through whose means the various senses are performed, and muscular motion excited." This is all very well so far as it goes, but it will not satisfy the mind of a thorough inquirer, nor illustrate the truthfulness of my first remark. The sublime powers and superior beauties of the brain are undiscovered in such a superficial definition. The object of this chapter requires a better one. Let us have a *name* for the brain which will convey a better understanding of its office. I propose to call it the **CAPITOL OF THE NERVOUS SYSTEM**. It stands in the same relation to the human body that the Capitol at Washington does to the United States. There are telegraphic wires proceeding from this Capitol which connect with other wires leading to every part of the Republic, and there are nerves proceeding from the brain which connect with other nerves leading to every part of the human system. These nerves are like telegraphic wires, and convey impressions to and from the brain with the velocity of lightning. They permeate the skin so extensively that a slight change in the atmosphere is quickly telegraphed to the physiological capitol. Experiment has demonstrated the fact, that the intelligence of an impression made upon the ends of the nerves in communication with the skin, is transmitted to the brain with a velocity of about one hundred and ninety-five feet per second. Intelligence from the great toe is received through the nervous telegraph at the physiological capitol, called the brain, in only about one-thirtieth of a second later than from the ear or face.

The digestion of food, by which process blood is manufactured, depends upon the electric currents sent by the brain through the pneumogastric telegraph, or nerve, to the stomach. The correctness of this hypothesis has been illustrated by experiments tried by a celebrated physician in England. In these, a couple of rabbits were selected, which had been fed with the same kind and quality of food. On one of them he performed the operation of cutting the pneumogastric nerve leading to the stomach. The latter being deprived of the nervous stimulant, the animal soon died from the effects of a loaded stomach coupled with suspended digestion. The other rabbit, which was not operated on, was killed after an interval of almost twenty-six hours, and on examination it was proved that the food in its stomach was entirely digested, while in that of the former, the food remained almost as crude and undigested as when it left the masticating organs. Another experiment was made upon two more rabbits in the same manner, except that after the nerves leading to the stomach were cut, galvanism was applied in such a way as to send the current through the discon-

nected nerves to the seat of digestion. At the end of twenty-four hours they were both killed, when it was found that the food in the stomach of the one whose nerves had been severed, and put in connection with the galvanic battery, was nearly as well digested as that in the other, which had not been operated on. These experiments show that the stomach depends for the performance of its office on the electrical or nervous stimulus which it receives from the brain. Similar experiments to those just mentioned have been tried with reference to the heart and other organs, in all of which they ceased to perform their functions when the nerves were cut, and commenced again as soon as the galvanic fluid was applied. It is not necessary for the purposes of this treatise, to demonstrate that galvanism and this nervous element provided by the brain are identical. It is evident that they are not; but they are so closely related that one will perform the office of the other, and this fact is sufficient to show that the two forces or elements are similar in their character, and that one is a modified form of the other. Animal magnetism, electro-magnetism, galvanism and electricity, all differ a little from each other, and in employing the term *electricity*, chiefly in speaking of the nervous forces, I do so because it is a term better understood by the masses.

#### NERVOUS TELEGRAPHY.

I have said that the brain is the capitol of the nervous system. It may also be called the great receiving and distributing reservoir of nervo-electricity. It is largely composed of two substances: one an ash-colored matter, which, if spread out, would cover a surface of six hundred and seventy square inches; the other, a fibrous matter, firm in texture, and tubular. The ash-colored matter is the receiving, and the fibrous matter the distributing reservoir. There are in other parts of the system various smaller receiving and distributing reservoirs, composed of the same substances, but all these are under the control of the superior one located in the brain. These are called by physiologists nerve-centres, and to carry out the analogy between our nervous system, and the telegraphic system of our country, the nerve-centres may be compared to our State capitols.

The spinal cord is the great nervous trunk, or the main telegraphic wire leading from the brain, and from the brain and spinal cord proceed the motor nerves, the nerves of sensation, and the nerves of special sense. With the motor nerves the mind telegraphs to the limbs to move, and they instantly obey, for the force they carry contracts one set of muscles and expands another; for electricity, whether animal or mechanical, has the power to contract or expand any substance. By the action of the motor nerves upon the muscular system, the phenomena of animal motion are performed. Through the nerves of sensation the

brain is quickly informed by the telegraph, if a wound is being inflicted upon any portion of the body, if disease is intruding itself upon any organ, or if anything disagreeable or pleasurable is brought in contact with any part of the body. Through the nerves of special sense, the brain is informed by telegraph whether it be light, or dark—whether there be silence, or noise, etc. So we see that the Great Artificer, and not Professor Morse, was the inventor of telegraphy. To Morse belongs the honor, and it is indeed a great one, of having adapted this same system of intercommunication with the quickness of lightning between villages, States, and nations ; a discovery which will eventually unite all mankind in common sympathy and brotherhood.

Most people know that telegraphic operators supply the electricity which they send over the wires by galvanic batteries, prepared according to the usual processes explained in our school-books of Philosophy. But whence is this animo-vital electricity we have been speaking of derived ? Well, I will tell you. The principal source is the stomach, that ever-active laboratory. The dissolution of any substance sets free the element commonly called electricity. The food you eat, if digestible, goes through a process of dissolution in your stomach, and as it dissolves, the electricity evolved ascends through the nerves made for the purpose, to the ash-colored matter of the brain. The vitalizing property of air is mainly electricity, and, consequently, we receive this element by the lungs and pores, from which it is taken up by the blood, and carried to the great receiving reservoir of the brain, which, I may add, accommodates more blood than the fibrous matter of the brain. The blood on entering the ash-colored matter discharges its cargo of electricity and nerve-nutrient, and returns to the body for another load.

Large quantities of animal electricity are also generated by the alkalies and acids of the animal organism. The mucous membranes, or linings of the cavities, are continually excreting a semi-fluid called alkali, and the serous membranes, or outer coverings of the same, an aqueous or watery fluid, called acid, and according to the testimony of Dr. Bird, if these fluids are so placed as to be connected by parietes of an animal membrane, or a porous diaphragm, a current of electricity is evolved.

Hence, we find that not only are our stomachs generating electricity, but we are inhaling it by our lungs, and our pores, and the external or serous, and internal or mucous surfaces, united as they are by natural parietes and porous diaphragms, are producing it in large quantities. As it is produced, or enters the system, it is so modified as to be made fit for the uses of the body.

The brain is as industriously distributing this vital electricity through the system, as the heart is circulating the blood, and too much, or too little, given to any particular organ, produces disease therein.

The complete withdrawal of nervo-electricity from any part paralyzes it, so that it has neither sense nor motion. If withdrawn from the motor nerves only, sensation remains, while motion is lost ; if from the nerves of sensation only, then motion continues, but sensation is destroyed.

FIG. 2.



PROFESSOR BRAIN'S TELEGRAPH.

traced to disturbances of the mind, or to an abnormal condition of the blood.

If withdrawn from the nerves of special sense, the power of hearing, seeing, smelling, and tasting is lost ; or it may be withdrawn from only one set of the nerves of special sense, producing some of the foregoing difficulties, without affecting the other senses. Too little vital electricity given to the liver, renders that organ torpid—too much, causes nervous congestion and inflammation ; too little given to the stomach causes nervous dyspepsia—too much makes the appetite voracious, and induces other derangements to the digestive machinery ; and hence, we see that to all the organs a proper quantity must be distributed, or disease results.

It is unnecessary to pursue this explanation further to show that the nervous system is a complex piece of machinery, as delicate almost as the spider's web which is spread out over the meadow grasses, and that many diseases arise from a defective nervous system. Those which do not and which may not come under the exceptions mentioned at the opening of this work, can be

#### MENTAL DISTURBANCES.

From what has already been said, it is apparent to any logical mind that diseases often result from trouble or depression of mind. So closely allied are the brain and the nervous or telegraphic system, it is impossible for one to be disturbed without exciting the sympathy of the

other. The brain, besides being the receiving and distributing reservoir of animal electricity, is the residence of the mind, or the Ego which controls its action. When, then, anything occurs to disturb the equanimity of the mind, the brain at once telegraphs the melancholy news over the wires, or nerves, to every organ of the body, and, like a well-regulated and affectionate family, all join in sympathy for the afflictions of the one which they regard as the head and provider. In some cases, when great grief or emotion is present, the brain works so actively in producing intense thought, that it consumes all, or nearly all the vital electricity of its reservoir, and when this bankruptcy takes place, it even withdraws that which it has supplied to the vital organs. When it reaches this crisis, death results. Emotions of the mind, it is well known, greatly affect the organic secretions, and Dr. Trail does not greatly magnify a fact, when he remarks "that they may be depraved or vitiated as readily by excessive mental emotion, as by a drug poison taken into the stomach." He continues by saying, that "a paroxysm of anger will render the bile as acrid and irritating as a full dose of calomel; excessive fear will relax the bowels equal to a strong infusion of tobacco; intense grief will arrest the secretions of the gastric juice as effectually as belladonna; and violent rage will make the saliva as poisonous as will a mercurial salivation."

Says Combe: "The influence of the brain on the digestive organs is so direct, that sickness and vomiting are among the earliest symptoms of many affections of the head, and of wounds and injuries to the brain, while violent emotions, intense grief, or sudden bad news, sometimes arrest at once the process of digestion, and produce squeamishness, or loathing of food, although an instant before the appetite was keen. The influence of the mind and brain over the action of the heart and lungs is familiar to every one. The sighing, palpitation, and fainting so often witnessed as consequences of emotions of the mind, are evidences which nobody can resist. Death itself is not a rare result of such excitement in delicately organized persons."

A story related by the late English author, Elliot Warburton, is interesting in this connection. "A Howadji, or sacred traveller (more given to lectures than to prayers), met the plague coming out of Cairo, and reproached that demon with his murderous work. 'Nay,' said the fiend, 'I have slain but a few; it is true that twenty thousand of the faithful have died, but only one-tenth of them fell by my hand—the rest were slain by my fellow-demon, FEAR.'"

In times of war, the influence of the mind on health has been many times strikingly exhibited. During the great Civil War between the North and South, all newspaper readers knew of the fatality attending the Federal "Army of the Potomac" in the Chickahominy swamps. Most people attributed the prevalence of sickness and death among the

soldiers, at that time and place, simply to the unwholesome air of the locality, but this was not all. It was a dark day in our country's history ; many of our bravest men felt disheartened ; and mental depression, if not despair, rendered our country's noble defenders susceptible

FIG. 3.



THE HEART AND ARTERIES THAT CARRY THE GOOD VITAL FLUID TO ALL PARTS OF THE BODY, AND VEINS THAT RETURN THE CURRENT TO THE HEART.

to malarious influences, and they became ready victims to the unwholesome vapors with which they were enveloped.

The frightful mortality attending the allied armies at the Crimea, was no doubt more attributable to bad management on the part of the commanding officers than to inclement weather. The soldiers, having lost confidence in their commanders, became depressed in spirit ; they were filled with fearful forebodings ; the buoyancy of their nervous systems was disturbed, and thereby digestion impaired. Through these discouragements they were made susceptible to disease, and would have been liable to its attacks, however favorable the climate ; while a slight unfavorable change in a foreign atmosphere, under such circumstances, would induce fatal results.

The English press attributed the sudden death of Lord Raglan to the censures heaped upon him at home. Many politicians in this country ascribe the illness which ended the career of one of America's greatest statesmen, to disappointment in not receiving the Presidential nomination from a convention of his party.

Thus we see the influence of the mind on the body is generally understood and admitted. But few stop to divine the means by which it is effected. It is well, therefore, to understand that every organ is notified on the telegraphic system, if any thing offends the seat or consciousness of the human being, and these organs are often taxed or compelled to give back part of the nervo-electricity with which they are performing their offices. If, through any accident to the limbs,



contact with any powerful poison, or impurity of the blood, the harmonious evolution and circulation of the nervo-electric fluid in any part of the body are disturbed, the brain feels the effect, discovers the cause, and faithfully informs all the members of the family, who contribute vital healing forces with which they endeavor to conciliate the difficulty, and if they fail, the whole system is thrown into discord.

## BLOOD DERANGEMENTS.

Next, I will speak of the blood, for all diseases which do not arise from the causes already named and explained, have their birth in a deranged condition of that almost as mysterious fluid which circulates through the entire system. In plain language, the blood is fluid bone, fluid cartilage, fluid muscle, fluid nerve, and fluid everything that goes to make up the human body. Technically, it is mainly composed of corpuscles floating in *liquor sanguinis*. These corpuscles are minute bodies, resembling, very nearly, in shape, pieces of coin, as represented in the illustration, Fig. 9. They can only be seen by aid of the microscope. There are two kinds of corpuscles, the red and the white, or colorless. In health, the red predominates in the ratio of ~~three or~~ <sup>5</sup> ~~four hundred~~ to one of the white corpuscles. Hoffman estimates that there are twenty-eight pounds of blood in a man of average size. This fluid is circulated through the system by the heart, arteries, capillaries, and veins. The heart may be said to be the capitol of the vascular system, as the brain is the capitol of the nervous system. It may also be called the receiving and distributing reservoir of the blood, as the brain is the receiving and distributing reservoir of the nervo-electrical forces. The heart is an incess-

FIG. 4.



DIAGRAM OF BLOOD CIRCULATION.

- 1, 2, left heart; 3, 4, right heart; 5, 6, lungs; 7, great arteries; 8, brain; 9, great veins; 10, spleen; 11, intestines; 12, kidneys; 13, lower extremities; 14, liver.

sant worker and a good manager. It pumps vital or arterial blood through the arteries and capillaries to every part of the system, and pumps it back through the veins to itself again, and then pumps it into the lungs, to become revitalized by the oxygen of the air we breathe, from which it again receives it to send it on its recuperative mission. The heart undergoes four thousand contractions per hour; each ventricle is

FIG. 5.



CAPITOL OF THE VASCULAR SYSTEM.

1, The superior vena cava; 2, the inferior vena cava; 3, the right auricle; 4, the right ventricle; 5, the situation of the tricuspid valves; 6, the partition between the two ventricles; 7, the pulmonary artery; 8, the point where it separates and enters the right and left pulmonary artery for the corresponding lungs; 9, the four pulmonary veins bringing the blood into the left auricle; 10, the left auricle; 11, left ventricle; 12, location of mitral valve; 13, location of sigmoid valves of the aorta; 14, the position of the sigmoid valves of the pulmonary artery.

reckoned to contain about one ounce, and, therefore, we are brought to the astonishing realization that two hundred and fifty pounds of blood pass through it in that brief space of time. The fleshy parts of the body are filled with what are called capillaries. An Irishman once remarked, that a gun was a hole with iron made around it; well, a capillary is a hole with animal fibre built around it, and there are so many of them that the human system almost resembles a sponge in vascularity. People who are continually drinking something when the thermometer gets into the nineties, must readily comprehend this statement. They are constantly drinking, and the water is constantly running out of them. Their clothing becomes saturated with their perspiration. Into the capillaries, the heart, through the arterial system, pours the life-giving blood, and after it has deposited its vital atoms, and taken up the worn-out ones, the heart sucks it up through the veins to be renewed.

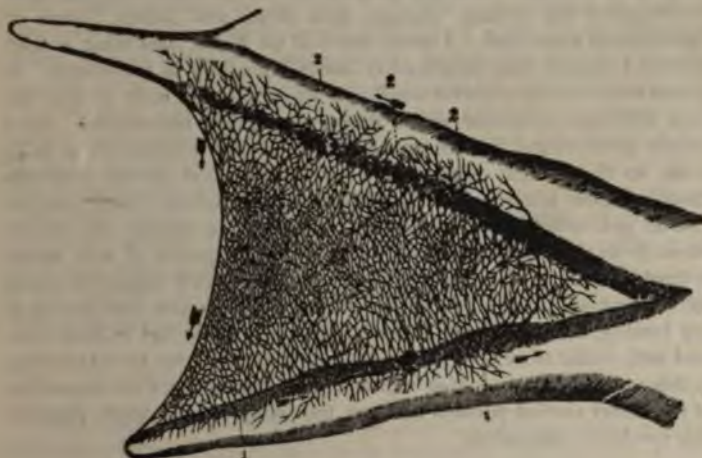
The blood may be said to carry on a coastwise trade with the various organs and tissues of the body. It goes out freighted with fresh living atoms, and visits every part of the body, even the

bones and muscles, and gives that which will repair each part in return for atoms which are no longer useful. These waste matters it carries to the dumping-grounds, called the lungs, liver, kidneys, excretory vessels and pores, and these organs empty them out through the channels nature has provided. The heart is the shipper.

I have thus intruded these illustrations to present the whole matter clearly to the mind of the non-professional reader, and I trust I am fully

understood. Now then, let us suppose the blood becomes impure, so that the heart has no good arterial fluid to dispense to the various organs. The latter are not only deprived of the nourishing properties of good blood, but are left to counteract, as best they may, its corrupt particles. The vital parts are placed in the position of a man with his hands tied, who is called upon, not only to feed, but defend himself. The result is, the human machinery becomes clogged with poisonous

FIG. 6.



A FROG'S FOOT.

The Capillaries as seen in the web of a Frog's foot, under the microscope.  
1, 1, are the veins, and 2, 2, 2, the arteries.

humors. These may block up the liver so that it cannot perform its functions properly, and thereby cause irritation, or inflammation, or they may produce a tubercular affection of that organ. They may attack the lungs, producing pulmonary disease. They may irritate or inflame the lining of the stomach so as to impair digestion, and ultimately induce obstinate dyspepsia. In short, no organ or fibre of the body is safe when they are present. These impurities are more liable to affect a person internally than externally. Many persons suppose if there are no pimples, blotches, ulcers, or tumors on the surface, the blood may be considered pure, no matter how much pain or suffering may be experienced inside of the outer covering. This is an error; for many of the most troublesome affections of the hidden portions of the body are caused by blood impurities. Those who have them on the surface are the most fortunate, for, as a general rule, when the blood possesses strength enough to pitch these troublesome particles out on

the surface, it also possesses the ability to protect the internal organs from their corrupting influence.

What I have said in the foregoing relative to the blood, relates rather to *active*, than *latent* impurities. The latter may be defined as those foreign properties in the blood, which, under favoring circumstances, may induce disease. Ordinarily a person having them is unconscious of their presence. But let some poisonous gases or germs infest the atmosphere, and they at once, like the secreted burglar, open the doors of the system, coalesce with them, and induce fevers or difficulties of some kind. I think fevers of all kinds, including scarlet fever and measles, may be traced to latent impurities in the blood. A person could hardly contract small-pox when exposed to it, except for these insidious properties which render the system susceptible. As a female germ cannot produce a child without the addition of a male germ, so these latent impure particles in the blood cannot generate disease without meeting their affinitive germ or poison. Seed cast on ground not suited to it produces nothing, while simply the pollen blown from some distant field on to just the right quality of soil, seems to meet something equivalent to the ovule, from which vegetation starts up, as if by magic. It is a fact known to many scientific men, that in almost any locality, soil taken from a depth of thirty or forty feet is soon covered with white clover. This can only be accounted for by attributing to this soil germinal qualities, which, brought in contact with the pollen of the clover carried perhaps miles on the wings of the wind, produce this species of vegetation.

#### THE GERM THEORY.

What is the germ theory? It is the doctrine that disease is communicated to the human system by minute animal organisms generally known under the name of bacteria, which are found in great abundance in both air and water. *Bacillus*, *spirilla*, *micrococcus*, *streptococcus*, *diplococcus*, etc., are of the same genus, and have been respectively named according to their varying forms or modes of growth. The reader will be interested in what will be here presented on this subject, and before this chapter is finished it will be perceived that the theory of the cause of disease, as given in the beginning of this chapter, is not the least affected by more recent discoveries. The theory of the causes of disease, as given in the opening chapter, first made its appearance in "MEDICAL COMMON SENSE" in 1857-58, and when that volume was revised in 1869-70 it was repeated in "PLAIN HOME TALK, EMBRACING MEDICAL COMMON SENSE," substantially as the reader finds it at this time. Up to the present moment its correctness remains unchallenged. It is not at all disproved by the part which bacteria plays in human ill.

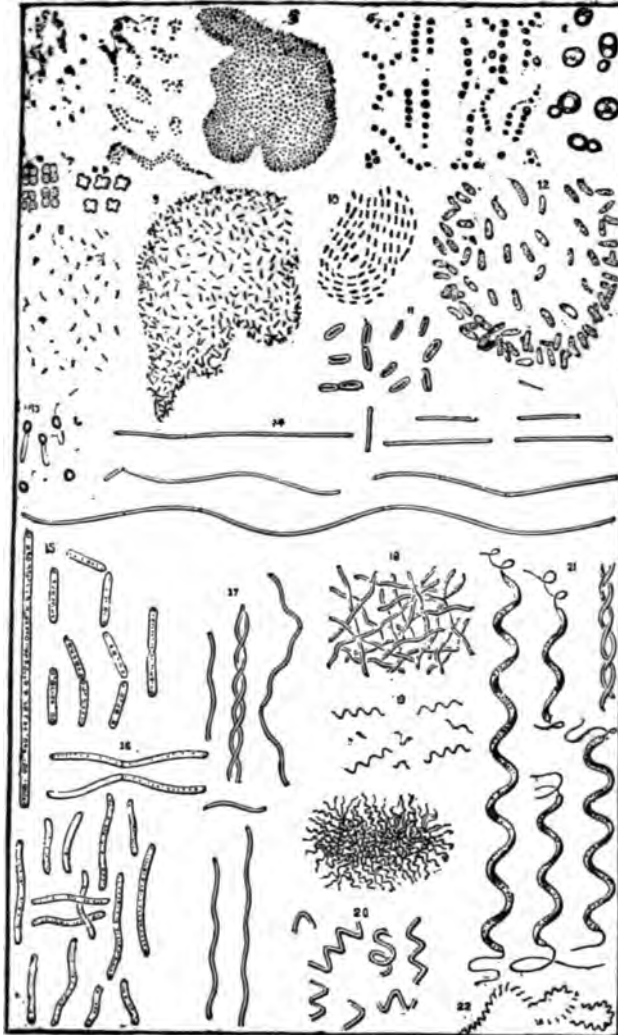
Linnaeus, the great botanist, was probably the first scientist to broach the germ theory, nearly 150 years ago, but it received no recognition from the medical profession. From that time until about 1870 scientists who were experimenting to ascertain whether there was anything in the theory of spontaneous generation were continually running against evidence of the correctness of the belief of Linnaeus. As late, however, as 1876, "Appleton's American Cyclopædia" states (Vol. XVI., page 843) that "we are still ignorant of the different viruses, contagions, poisons, miasmata, etc. \* \* \* The most widely prevailing doctrine of the present day respecting the origin and communication of disease is that known as the germ theory. Special organic forms known as mycrozymes, bacteria, bioplasta, etc., alleged by various pathologists to be found in contagious fluids, have been the subject of much discussion, some contending that they are of a fungoid growth and enter the body as parasites, others that they are germinal masses derived from animal cells, and due to a series of changes in existing matter under new circumstances; while a third class deny positively that any such germs exist." In "Appleton's Annual Cyclopædia" for 1884, it is stated that "the study of micro-organisms had long been regarded, even by the medical profession, as barren of practical results," but that "it had assumed greater importance during the past year."

#### A PROPHECIC ARTICLE.

In the issue of *Dr. Foote's Health Monthly* for June, 1876, may be found the following contribution to the discussion, from the pen of the author of this volume: "Pasteur first demonstrated, and the notion is now generally received, that the atmosphere, no less than the water, is filled with minute animal life which only the microscope can reveal. We are in the habit of calling the minute living organisms in air and water bacteria. Much is yet to be learned of these microscopic creatures. But if they are at all like the higher orders among animal life, there must be the bad as well as the good among them. Observe for a moment mankind: We have the comparatively good people, those who are tolerably decent, and the right down cruel and wanton. There are all grades, from those who are aspiring to do good, to those who contemplate only mischief, and glory in it.

"Among the wild beasts, we have species which are harmless and disposed to 'live and let live'; and those even in the same neighborhood who delight in destroying the lives of their more peaceful companions. Among the fishes, too, we find those which would live peaceably if they could, subsisting on the nutritive matter they can gather up without preying upon their fellows, and right among them are others, notably the bluefish, which are so destructive of their good neighbors that they

FIG. 7.



BACTERIA.

[For description, see foot-note on page 29.]

leave a track of crimson blood behind them, as they go through schools of other fishes, in pursuit of food and bloodthirsty diversion.

"When we look still further down into the vegetable world, and behold the valuable vegetables upon which we so largely subsist, we find they have to dispute their places and growth with the rank and pestiferous weeds which grow side by side with them, unless rooted out by the provident gardener.

"Would we not, then, reasoning by analogy, quickly suspect that the bacteria of the air are yet to be classified into species as follows: (1.) The harmless and nutritive, for science recognizes air as one of the necessary foods. (2.) Those which may possess neither useful nor injurious qualities, unless some conditions arise in the higher animal to invite their depredations; such, for instance, as wounds, or pathological changes which depress the vital forces. (3.) Those which are absolutely poisonous and depredative, seizing upon the comparatively healthy subject, and prostrating him on a bed of disease, and possibly death, while finding easy victims in those who are suffering from diseased conditions of blood, or depressed states of the nervous system.

"It may be that we have a typhoid species of bacteria whose undeveloped germs harmlessly float in the air until some festering corruption or filth furnishes them a nest for incubation, whereupon they develop by the millions, as all lower orders of animal life do, and then carry disease in their path. If this be possibly true, then why not the small-pox, diphtheria, measles, scarlatina, and whooping-cough varieties, all dependent upon certain peculiar conditions to afford them nesting-place for the germs which may, if this theory have any foundation in fact, be ever present in the atmosphere."

That this article was prophetic of what science would eventually reveal, was glaringly evidenced at the great Columbian Exposition in

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In the illustration, page 28, copied from the *Microscopic Journal*, may be seen many differing forms of bacteria, and to all of these have been given distinctive names, many of them being rather formidable titles with which we need not try to become familiar. Nos. 1 and 2 are *spherical* bacteria; No. 2 represents that found in vaccine lymph; No. 3 represents an agglomerated mass of such bacteria; Nos. 4, 5, 6 and 7 are found respectively in urine, sour milk, mouldy vegetables and spoiled eggs; Nos. 8, 9, 10, 11, 12, 13, 14 and 15 are *rod-like* bacteria with variations, No. 10 being common to sour beer; Nos. 16, 17, 18 and 19 are sketches of the *vibrio* varieties. Nos. 20, 21 and 22 are *spirilla* (or spiral) bacteria, shown as they appear separate or in swarms. All these figures were drawn by the expert microscopist, Dr. Ferdinand Cohn, from what he has observed under a microscope magnifying six hundred and fifty diameters, or what some would call four hundred thousand times. The whole group as here reproduced is from an excellent monograph in pamphlet form entitled "Bacteria; An Account of their Nature and Effects, Together with a Systematic Description of the Species," by T. J. Burrill, Ph.D., Professor of Botany and Horticulture, of the Illinois Industrial University.



Chicago in 1893, where were exhibited the great variety of bacteria that the scientists had corralled and confined, not in cages like the animals in a zoological garden, but in small vials, each labelled with the disease of which they seemed to be the responsible carriers. These germs were indeed classified. The alleged germs of consumption, typhoid fever, erysipelas, diphtheria, cholera, measles, scarlet fever, and an infinite variety of other contagious diseases, all bottled, securely corked and labelled for the inspection of those who could use the microscope. Facetiously rhyming on these germs, our able surgical contemporary, Dr. Helmuth, thus speaks of one of the varieties :

"Oh ! powerful bacillus,  
With wonder how you fill us  
Every day !  
While medical detectives  
With powerful objectives  
Watch your play !"

Moreover, they have been given distinct names, according to their nature and effects ; they have been pictured in a manner that shows they are as numerous and varied as the photographs of the thieves, pickpockets, and housebreakers in the Rogues' Gallery at the Central Police Station. Nor is this all. For, if the reader will be patient and pursue this matter further, he will discover that the scientists have found many useful bacteria which may be employed advantageously in butter and cheese-making and various other useful economic processes, as foreshadowed in the article quoted from the *Health Monthly*.

It is more than probable that the nauseating odors coming from anything undergoing putrefaction are caused by the bacteria that are attracted thereto. We shall see further on how butter is improved in flavor and smell by the presence of the bacteria that are cultivated, for the purpose, by dairymen, and the existence of bacteria of this sweet smelling variety naturally suggests the possible existence of that of an opposite nature. We may have microscopic skunks as well as those which are visible to the naked eye. Will the scientists brave the repulsive odors and approach the decomposing carcass with microscope in hand on seashore or field to find out ?

Just after writing the above an article came into my hands by G. Clarke Nuttall, in *Knowledge*, which tells us that the peculiar smell of fresh earth is caused by the presence therein of "myriads of tiniest organisms," which the writer thinks belong to the fungus family. It was thought when they were first discovered that the minute organisms that produce fever and ague, chills and fever, etc., were members of the vegetable kingdom, and one physician called them the "ague plant ;" but they have since been relegated to the animal kingdom, as will soon



be observed. If, therefore, the fresh ploughed ground owes its odor to the presence of minute organisms, we already have this additional suggestion that perhaps disagreeable smells arising from decomposing substances may in all cases be due to bacteria. "It is a new revelation," says Mr. Nuttall, "to find that it is the outcome of their activity." The earth at certain seasons swarms with them.

It may not appear disagreeably egotistic in this place if I relate how the views contained in the article from the *Health Monthly* were regarded by a promising young scientist who had just graduated from the College of Physicians and Surgeons in the City of New York, in the spring of 1876. As he was fresh from college, and had doubtless heard of all the latest discoveries relating to disease, I naturally regarded his judgment as of some value in passing upon the speculations that were exercising my brain. I verbally presented to him the substance of the article herein copied on the subject of bacteria. He listened impatiently to what I had to say, with a countenance which betrayed the greatest amount of incredulity, and when I had finished, he exclaimed: "You cannot prove your theory! It has absolutely no value! It is not supported by anything science has revealed!"

Many years have passed since this judgment was rendered, but the same young scientist, now a middle-aged man of some prominence, if he will look up bacteria in the Standard Dictionary (Funk & Wagnalls Co., 1895), he may see a great variety of these interesting microscopic specimens illustrated, and yet many more have been discovered. The dictionary presents only about a dozen of the most mischievous ones. Fig. 7, on page 28, shows a choice lot of them, but if the reader will turn to a medical dictionary he will find about two hundred or more, all bearing a distinctive name.

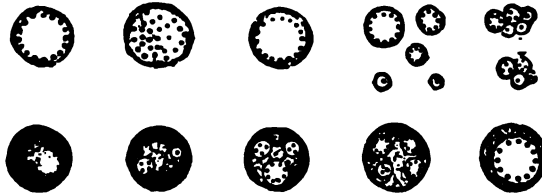
#### GERMS OF MALARIA.

For a long time it has been thought that malarial fevers are attended with the invasion of the blood by some low and minute form of plant or animal organism, now called microbes. These can only be discovered by high power microscopes and expert manipulation. It is now pretty generally accepted that the animal parasites described by A. Laveran are the cause of the aching and shaking of fever and ague. He has described several forms, which may, however, be the same intruders under different guises, or at different stages of development. Those which we have chosen to give of his illustrations are what he calls "bodies No. 2," which he found most abundantly in the blood of malarial patients.

These are technically called the corpuscles of Laveran. The first line represents the bodies themselves of various sizes, magnified 1,000 times, while in the second line they are seen in or upon

the red corpuscles of the blood, which in course of time disappear seeming to be eaten up by the parasites. Some red corpuscles clear spots where the young invader has just begun to grow. The grown parasites sometimes show at their borders filaments, moving great rapidity. They are very long and slender, and can sometimes be seen moving freely like eels among the red corpuscles with rapidity that it is difficult to keep track of them.

FIG. 8.



LAVERAN'S GERMS OF MALARIA.

#### CHEESE AND BUTTER-MAKING GERMS, ETC.

Under the head of "Cheese-making Bacteria," in the *Liter Digest*, of June 18, 1898, may be found the following: "The 'ripening' of cheese, so as to produce the characteristic texture and flavor any desired variety, has been brought to a high degree of perfection. Dr. Olav Johan Olson, of Norway. \* \* \* Dr. Olson, it seems, investigated various cheeses, and has caught and cultivated the microbes. Then he has reversed the process, and used his cultures to produce the various cheeses from which he started. The kinds of microbes are not many, but by their combinations in different proportions, different results may be obtained. The milk is sterilized and heated to 70°-75° C., and the store-room is kept guarded against foreign microbes. Those that are desired are added in the requisite proportions and their vigorous growth is of itself enough to overcome the influence of accidental strays. The production of the kinds of cheese is no longer an affair of the laboratory; but Dr. Olson will take your order for Gorgonzola, Stilton, or Camembert, and will furnish the precise description required at a cost satisfactory to your pocket and to his own."

It is not necessary, however, to go to Norway or elsewhere to find useful bacteria of a rare kind. While the World's Fair was in full blast in Chicago in 1893, a can of milk from Uruguay was received in apparently damaged condition. It had been for weeks on the way, and when opened it was found to have a peculiar bitter taste. It was submitted to Professor Herbert W. Conn, of the Biological Laboratory of Brooklyn Institute, at Cold Spring Harbor, Long Island. During the summer of

1893 he was experimenting with the bacteria of milk at the Great Exposition. The sample of milk which had travelled nearly half around the globe was found to contain just what Professor Conn had been looking after. He had already discovered some forty different bacilli in milk, and this one he labelled Conn's B., No. 41, and this at once became famous. It not only improved the keeping quality of butter, but greatly added to its flavor ; so much so, that it found its way very soon into three hundred and fifty creameries in a dozen or more States. It would not make good butter of poor cream, but it made a delicious quality from good cream ; one which possessed an inviting aroma and a nutty flavor. Butter made with this bacterium brought a higher price in market than any other. So we can get the best quality of butter at home if we must go to Norway for cheese, and this is due to bacteria of the useful variety.

There are other economic uses to which the kinder species of bacteria may be put which have been presented by Professor Marshall Ward, in his presidential address, before the Botanical Section of the British Association. He is said to have dwelt at considerable length on the many industrial processes which depend more or less for their success on bacterial fermentations. As reported in Appleton's *Popular Science Monthly*, he says : "The subject is yet young, but the little that has been discovered makes it imperative that we should go on, for the results are of immense importance to science, and open up vistas of practical application which are already taken advantage of in commerce. A bacillus has been discovered by Alvarez which converts a sterilized decoction of indigo plant into indigo sugar and indigo white, the latter then oxidizing to form the valuable blue dye, whereas the sterile decoction itself, even in the presence of oxygen, forms no indigo. Certain stages in the preparation of tobacco-leaves and of tea depend on a carefully regulated fermentation, which must be stopped at the right moment, or the product is impaired or even ruined, while in flax and hemp the best fibres are separated by steeping in water till the middle lamella is destroyed. Not every water is suitable for the process, but only that containing a particular bacillus, which destroys the pectin compounds of the lamella and leaves the cellulose. A process depending on this fact has been patented in the United States. The steeping of skins in water preparatory to tanning involves bacterial action for removal of the hair and epidermal coverings ; and the swelling of the limed skins is a fermentation process. Hay and ensilage have to go through fermentations involving bacterial action. The various flavors of butter and cheese are each produced by special bacteria, and the cultivation of them has become a considerable business, so that the production of whatever flavor may be desired has become a matter of reasonable certainty." It has been found that clover and many other plants that

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accumulate nitrogen from the soil, or, in other words, convert nit from the inorganic (mineral) world to the organic (vegetable) world by the aid of bacteria on the roots of the plant. The *Medical Press*, plea for microbes, says: "An American contemporary points out there are about a thousand species busily engaged in the destructive wood, and, were it not for their intervention, all the trees that grew would be standing to-day, living, or it may be dead, but in case as solid, as sound, and as firm as when they ceased to grow, and life must have been choked out ages since. \* \* \* They are accused of contaminating our water, but it is equally certain that were it not their ceaseless activity all the water in the world would be a concentrated solution of excrementitious and noxious products, the disintegrator which is due to these little organisms. Our very digestion depends upon them to a great extent, and if they were withdrawn from circulation we should very shortly become painfully aware of the fact. I let there be no class distinctions; every community has its black slaves and these should very properly be branded with the mark of infamy. The existence, however, of these misconducted atoms will not justify extending the anathemas to the countless millions of their species whom, and with whom, we live and move and have our being."

The capacity of bacteria for reproduction is evidenced by Comstock who calculated "that a single bacterium, by growth and division under favorable conditions, could fill the ocean in five days, multiplying as it does, in a geometrical ratio." They are in and about everything, and are far more numerous than any other species of living thing. They are quite as busy as any of us in doing the world's work as well as in perpetrating mischief. It is to be hoped that there is between the good and bad bacteria as much destructive conflict as there is between the different races and nations of mankind, and that this positive check to over-production may continue in the bacterial world. Let us also hope that the more highly civilized and useful bacteria may ultimately extinguish the savage and barbarous hordes of their species.

#### ARE GERMS PRODUCERS OR SIMPLY BEARERS OF DISEASE?

Returning to the baser sort, the question is not yet settled whether it is the bacterium itself or the poisonous source from which it emerges, that conveys disease. Professor Jaccoud asserts that "bacteria are only bearers of infection, as a fly may become the carrier of small-pox." Panum, Richardson, and others, according to "Appleton's Annual Cyclopædia" (Vol. IV., page 444), have discovered "that the septiferous fluid cannot be deprived of its virulent properties by either boiling, evaporation, or combination with acids in the form of salts," and adds, "that as no life could survive such operations, it must be inferred that the toxic (poisonous) agent is not the zoophytes themselves, but a

specific poison produced by them by a process of fermentation in the putrescent fluid." If this view be correct, it is the poison with which the bacteria are, so to speak, bathed, that does the mischief of conveying disease, in which case the causes of disease as mentioned in the beginning of the opening chapter, already embrace the newly discovered agent, inasmuch as these authorities call it an indestructible *poison*. But if it be finally determined that the bacterium itself has power to produce a specific disease, I predict that it will also be found that the mischievous germ can only find lodgement in those individuals who possess some impurity or abnormal condition of blood, or a devitalized nervous state which is capable of giving them nesting. Your hale, hearty, vitalized, and mentally exuberant neighbor will go unscathed. If otherwise—that is to say—if it be finally discovered that there are some bacteria which can take hold of a perfectly healthy man and prostrate him on a bed of sickness, they will certainly be such microscopic creatures as bear some analogy to visible poisonous specimens of animal life, like the venomous reptile, the deadly insect, etc., and it can be truly said that the victim of such bacteria has been laid low by poison, the same as if he had been bitten by a rattle-snake. In this case we have the bacterial variety indicated as the third class in the prophetic article in my *Health Monthly* in 1876, as already reproduced in this essay.

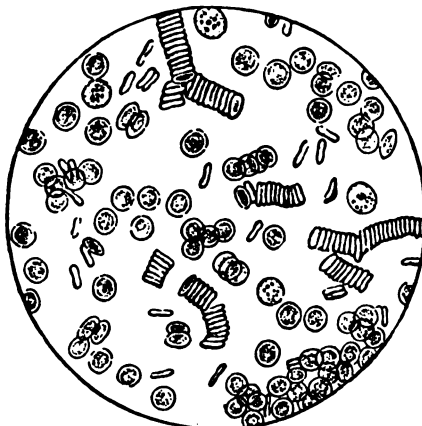
It is found that bacteria are ever present in everything that is undergoing decomposition. They seem to be the necessary scavengers of air, water, and of decaying substances upon the earth. As Dr. Ball puts it, "without microbes to assist in effecting chemical changes, the earth would reek with organic filth." It would seem to be in the order of nature to have these microscopic creatures enter into all lifeless bodies, and assist in their disintegration. It may also be consistent with this law that they should enter into all dying individuals, and help forward the destructive process. The dying process may be said to have commenced when the first departure from a healthy condition takes place, however slight that departure may be. If so, it is but natural to find the blood of the very sick man teeming with these destructive little creatures. In all advanced stages of disease when the doctors look for them, they are found more numerous than the fishes in the sea. There is, therefore, nothing to retract or amend in the opening portion of this chapter.

There are abnormal conditions of blood which can hardly be called impurities, active or latent. For instance, a person may have an insufficient quantity of blood, resulting from which he is weak, pale, and cadaverous. There may be an excessive supply of the white corpuscle, or an insufficient supply of the red corpuscle, producing paleness and leanness, but not necessarily leanness, as people so affected are often fat. There may be an insufficient supply of the white, or a super-

abundance of the red, giving undue redness to the skin, and preposing a person to inflammatory affections and congestions. In short, the blood must possess very nearly that proportion of red and white corpuscles which nature originally instituted, or disease will present itself.

It now having been shown that a free circulation of vital or nerve electricity, an unruffled mind, and good blood are essential to health

FIG. 9.



PICTURES OF WHITE AND RED CORPUSCLES.

Both the red and the white blood corpuscles show some variations in size and shape, even in health, but some of the most marked variations from the normal or usual appearance are considered distinctive evidence of disease and may aid the examiner to determine what diseases exist.

It requires only a moderate exercise of common sense to perceive that all diseases, excepting simply those induced by poison or accident, originate from a disturbance of these indispensable conditions. There may exist hereditary organic weaknesses, but even those had their origin in conception, or in fetal life, from the disturbed mind or vital fountains of the parent, thus not allowing a single exception to my theory.

The attention of the reader will next be directed to the principal causes of nerve and blood derangements, or the *primary* causes of disease. But, before concluding, let me ask if the foregoing does not lead to the irresistible conclusion, that the first duty of a physician to a patient is to see that his nervous system is set right, his mind emancipated from all depressing influences, and his blood restored to that condition which enables it to impart the tint of health to the skin, strength to the muscle, and rich and abundant juices to all the tissues?

## CHAPTER II.

### THE CAUSES OF NERVOUS DERANGEMENTS AND AFFECTIONS OF THE BLOOD.



THE subject of this chapter opens a boundless field for the investigation of physiologists. Indeed, should an attempt be made to trace out all the influences, immediate and remote, which tend to destroy the mental and nervous equilibrium, and render the blood a fountain of death rather than life, many volumes like this would be filled, and then the task would be unfinished. I shall, therefore, limit myself to an explanation of the principal causes—those over which we have the easiest control. Each shall be treated under its appropriate head, with such variety of matter as may be necessary to make it entertaining as well as instructive.

#### Ignorance.

This is the vehicle, loaded down like a trolley-car, or an excursion steamboat, that conveys into the system nearly all the nervous derangements and affections of the blood which afflict the human family. Plato long ago said that "ignorance is the root of misfortune." A large proportion of all the evils of which the essays in this chapter will complain, really spring from one common root—ignorance. Errors in eating, drinking, sleeping, dressing, ventilation, sexual isolation, sexual association, medicating, etc., the bad habits of childhood and of adult age, may be traced directly to ignorance. It casts a black shadow over every hearth-stone—it makes a dark corner in every institution of learning—it clothes with bigotry and intolerance thousands who claim to be the apostles of religion—and it

FIG. 10.



TRYING TO LIFT HIMSELF OVER THE FENCE BY THE STRAPS OF HIS BOOTS.

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even revels in the halls of science, putting smoked glasses over the eyes of those we are taught to revere as philosophers and sages. It makes peoples of all our planet play "blind-man's buff," where, on every side, there are moral and physical pit-holes ready to engulf them. One sees his neighbor in his true character, and if he grasps for him only catches costumes or professions. We are like moles, with only the rudiments of eyes, groping above the ground inhabited by the burrowing beneath. Thanks to Good Old Mother Nature, we have powers which those little quadrupeds have not, and if we will but place ourselves openly to the light which is ready to shine upon us, we will be tolerant of each other's opinions, weigh all things, and know fast that which is good, our posterity, if not we, may behold the brightness of the "good time coming."

There are two kinds of ignorance—*real* and *wilful*. The latter retards the outgrowth of the former. No sane person will voluntarily sacrifice health through wilful ignorance, unless that wilful ignorance is plumb backed by some of the genuine article. Like the "Jacobs," "Original Jacobs," and "Real Original Jacobs," they are all Jacobs after all. A person may shut his eyes to a disagreeable truth—resolve within himself that he will not see it, and impatiently trample it under his feet, and yet, did he fully comprehend the consequences, he would desist from his folly. A glutton may overload his stomach, with a full knowledge that he is violating a physical law—knowing that this violation will certainly render him physically uncomfortable. But were he sufficiently informed to have presented clearly to his mind the latent as well as active derangements one such violation engenders; could he but see the innumerable ills which will remotely spring from a cause apparently so slight, is it to be supposed he would sacrifice years of physical comfort for a momentary gratification of a morbid appetite? A thoughtless young woman may dress imprudently to attend a fashionable ball, covering but partially, or leaving completely exposed, portions of her person which she habitually wraps in flannels or furs. She is told of the danger, but laughingly retorts, "I know it, but I am bound to have a good time." This may be attributed to wilful ignorance, but a stratum of real ignorance lies at the bottom of it. She has an imperfect knowledge of how fearfully and wonderfully she is made, and how one slight physical derangement may lay the foundation for many diseases; to future years of mental and bodily wretchedness; and finally a premature grave. "A short life, and a merry one!" she gaily ejaculates, without knowing that such a thing is a physical impossibility; but it is, unless she ends her brief hours of frivolity by cutting her throat, or otherwise abruptly terminating her existence in one short moment, for all recklessness leads to mental and physical suffering; and though life may be short under such circumstances, it



is always long enough for nature to inflict her penalties ; for a person cannot die without disease, or physical infirmity, except by accident, assassination, or suicide, and when a few days or weeks of reckless hilarity are followed by months of mental and physical distress, even if death does come to the rescue, what becomes of the theory, of "a short life, and a merry one?"

Let the foregoing two instances suffice for an illustration of what is generally called wilful ignorance. We see that this species has its origin in real ignorance, and that a better understanding of the laws of life and health would speedily put an end to recklessness entered upon with but a partial knowledge of the consequences.

REAL IGNORANCE.

Real ignorance is the fearful enemy of mankind. Let us commence at the very beginning of the human being. How many know the essential conditions to bring into the world a healthy child? A man and woman love each other, or think they do, or they do not, but it is expedient to marry, and they do marry. The next thing you hear is, that the wife is pregnant. How did she become so? Accidentally, probably, for nearly all children are the accidents of gratified passion, instead of the products of willing parents who premeditated and prepared themselves for so important a work. Most married people are ignorant of the fact that their own physical condition at the moment each yields the germ, which is to start into existence a human being, has an everlasting influence upon that being. Many a child has been conceived when its father was lounging about home on account of sickness, and to-day suffers physically, and perhaps mentally, from the effects of that paternal illness. There are thousands of children to-day with disordered nervous and vascular systems who are so because they were conceived at the "making up" of quarrelsome progenitors. Many a child is the offspring of a rape, perpetrated by a brutal husband upon an unwilling wife, and this offspring goes through life with a weakly nervous system as a consequence.

Men and women marry, ignorant of the laws of mental and physical adaptation. This botchery of human procreating machinery goes blindly at work turning out babies. The babies do not ask to be born. Life and disease are both thrust upon them. Poor things! The doctors will earn half their bread and butter from these wretched specimens of humanity, if the unfortunates manage to live long enough to

FIG. 11.



THE CREATURE OF ACCIDENT.

earn anything. The ignorance of parents prior to, or at the moment the embryo of a new being is created, brings forth only the first instalment of disease with which it will have to contend. Here and there a prudent woman may be found who knows to what extent the offspring within her womb is physically influenced by her habits of thought and action. The majority do not. Few men, when treating pregnant women with unkindness, are conscious of the injury they are inflicting upon the miniature being in embryo. The period of utero-life is one fraught with danger to the health of the defenseless little creature which nestles as shrinkingly within the walls of the uterus before as it does timidly to its mother's bosom after its birth.

The babe is born ! What next ? Not one mother in a thousand knows how to rear a child in a way to promote health of nerve and blood. She feeds and clothes it improperly during infancy and childhood ; she drugs it almost to death, or lets some doctor do it, for ills proceeding from one or more of the causes already alluded to. Then the child must be vaccinated. How few know the fact that scrofulous, syphilitic, and other impurities are taken from the arms of diseased children, and inoculated into the blood of those who are free from such impurities ! The knife of the father, or the needle of the mother, or the aid of a physician with whom the parents are entirely unacquainted, is employed to perform this important operation, when only those combining skill with the greatest integrity, should be trusted, if it be deemed best to have it done at all. So that, from this source, a new element to corrupt the blood is imparted to the infant. As the child advances in years, a new and strange passion seizes it, often before the proper age of puberty. Ignorant of the complexity and functions of the procreative organs, it falls into bad habits in efforts to gratify a natural passion, and further nervous and blood derangements ensue. If it be a female, she arrives at the age when menstruation begins, untaught regarding this function. She observes the blood issuing from her body, and frightened at its appearance, attempts to stay the flow. I have many times been consulted by pale women suffering from menstrual irregularities, which were induced in childhood by attempting to arrest the menstrual discharge, by applying cold water, ice, or snow to the parts. Those who do know enough of the function to avoid this error, do not know how necessary prudence is during its performance. In rural districts, the out-houses are often built to project over streams, or they stand on hill-sides, so that draughts of air are continually passing up through them. The best of them in the country are poorly built for the protection of health, and especially the health of women. Many cases of menstrual irregularities, particularly in those who have but just commenced the performance of the function, may be traced to exposures in badly constructed places of this kind. Keeping the feet dry,

and the bosoms safe from changes of temperature, when they have been made sensitive and susceptible to disease by excessive dress, are precautions too often neglected. In some cases too little, and in others

FIG. 12.



MOTHER GRUNDY BLINDFOLDS THE MOTHERS OF THE RACE, AND THE CHILDREN, TOO.

too much, exercise is indulged in during the menstrual flow. The Moral Education Society of Chicago tells us, in one of its tracts : "The mother holds the key to the innermost life of her child, and she should impart the knowledge which, if in possession of sons and daughters, might save to many the wreck of health and happiness which often attends the outset of married life." But how are mothers to impart to

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children knowledge which they, too often, do not themselves possess ? From their own experience they might instruct their daughters in some things, but they cannot draw from their personal fountain of knowledge all needed instruction for their sons. In many important matters women are not encouraged to know much.

### AIR-BRAKES ON THE CAR OF KNOWLEDGE.

Dr. Alice Lee Moqué, writing the author from Washington about her difficulties in gathering up all the useful knowledge she desires to obtain, says : " I see it is claimed that our Medical Museum has the finest specimens in the world, and that the Museum Library is one of the best. Both of these are free to the public, but as the librarian refused to let me have Havelock Ellis's book on the ' Psychology of Sex,' I guess I'll have to don Jonathan's trousers if I am to be intrusted with anything heavy, or along the line of sex. And yet, could you have seen the beardless boys who were given the freedom of the library, I imagine you would have considered me quite as capable as they, of understanding and digesting anything there. It seems rather ridiculous that my boy, only sixteen, who has never read anything more technical than his school-books in his life, can secure books that will be refused to the mother who bore him, because, forsooth, she is a female, and not supposed to know anything about sex, perverted or otherwise. It is galling to a woman who has to endure the same thing in every direction the very moment she desires to know anything or do anything outside the beaten track." This complaint is not without reason, and the same sickly sentiment which forbids Mrs. Dr. Moqué to have such a work as she sought from the library prevails so widely in society, that most mothers are willing to go groping through life ignorant of many essential truths, and bring up a family of children no more equipped with knowledge pertaining to the sexes than they themselves can gather up from some clandestine and often misleading source. How, I again ask, can such mothers give the greatly needed instruction in physiology and hygiene to their children ? Ignorance leads ignorance hand in hand, in congenital blindness, to the abyss of disease and death.

### FALSE MODESTY LEADS TO HYGIENIC ERROR.

The coyness of young people of both sexes, but especially of young women, in attending to the " calls of nature," are fruitful sources of nervous and blood derangements. Children are brought up to regard the necessary attentions to the bladder and bowels as something so indelicate as to require the greatest privacy, so much so, that if places constructed for such purposes are not entirely shielded from observation, a young man, or a young woman, will go all day, or possibly for several days, without attending to two very important functions with any

degree of regularity. The results are, the blood becomes poisoned by the retention and absorption of waste matters, the nervous energies of the liver, bowels, kidneys, and bladder become paralyzed, and if the victim be a female, the pressure of water in the bladder in front, of the excrementitious matters of the bowels above and behind, displaces that sensitive organ, the womb, and then follow all sorts of ills to make life wretched. What kind of etiquette is this which teaches people to be ashamed of the functions an All-wise Artificer has instituted to preserve and keep active the most complex machinery ever made by His hand? Is it indeed a disagreeable task, one we are to be ashamed of, to dispose of the useless portions of the liquids and solids we have put into our mouths? May we not better teach our children to be ashamed of gluttony—of besmearing their mouths with vile tobacco, and loading their breath with the vapors of unwholesome drinks! May we not better place a gate at the door wherein so much that is injurious enters, than to stop up the outlet from which many things purer depart! Especially when absent from home, among people they have never seen before, and may never see again, are coyish young people—and some old ones—foolish in this particular; and because appropriate places for physical relief cannot be entered without observation, irregularities are inaugurated which finally bring them to their beds, and their doctors. People in advanced life, unless sorely afflicted with mock modesty, are usually more sensible in regard to this matter, and still, they are not sensible enough for their own good, nor have they a particle of sense, in many instances, in giving right impressions to their children.

Grown-up children know too little of themselves to instruct those who come after them. As before remarked, mothers who have the care of children, and who should consequently possess all attainable information regarding the human system and its wants, often know the least. Picture to your imagination women, well-informed on most subjects, bearing in educated circles the reputation of being intelligent, calling on a physician, and trembling with anxiety on account of a tumor they had discovered, from which they apprehended the most painful consequences. An examination is made, and what they regard as a tumor, is found to be simply the neck of the womb, in a perfectly healthy condition, and in the place Nature assigned for it! Such instances have occurred in my practice. One young married woman, of unquestionable popular intelligence, consulted me concerning a supposed cancer. Her mind was terribly exercised about it, and she hoped her case was not incurable. On examination, the cancer proved to be simply the clitoris, although somewhat inflamed by her frequent manipulations after she first discovered it. At the outset, it was only the natural organ such as is found in all healthy women; but she could not let it alone when she discovered it, thinking she "must do something

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for it," and the growing irritation resulting from her attentions to the supposed cancer, she attributed to the progress of the disease. Women have consulted me who supposed leucorrhœa was simply a natural and healthy discharge. With such ignorance on the part of mothers, especially when they are so thoroughly saturated with fashionable social nonsense, we can hope for little improvement in children. We must look to schools, ultimately, for our physical redemption, and if proper means will be adopted by those having charge of our institutions of learning, great things may be effected in one generation. In the chapter headed "The Prevention of Disease," I shall make some suggestions which should be pursued in all places where young people are taught. In a country like ours, so full of school-houses, ignorance in reference to vital matters pertaining to physical life would be utterly inexcusable if the right course were adopted by our boards of education and school committees.

I will now conclude this part of the chapter with the remark that much that will appear in subsequent pages might be embodied under this head, for ignorance lies at the bottom of all bad habits and usages. But under separate heads can be given greater prominence to many things to which I wish to call especial attention.

##### **Violating the Moral Nature.**

Many people have an idea that if they pay fair respect to what are usually understood as physical laws, all will go well with them so far as bodily health is concerned. But few seem to understand the sympathy existing between the moral and physical man. If an individual, to-day, has sufficient physical strength and endurance to suppress the voice of the inward monitor—the conscience—and retire at night with a relish for sleep, after he has perpetrated some great moral wrong, he imagines he will always be equally successful in crushing out his better nature. But if no other cause intervenes to render his nervous system, and hence his mind, wretchedly sensitive to all such violations, the effort required to put down conscience will, in time, do it, and all at once he will find himself plunged into a mental hell from which, and into the sulphurous one pictured by ancient theologians, would be a grateful deliverance. We cannot persistently do those things which we feel to be wrong, without wearing away (by slow degrees, perhaps, in some cases), the nervous strength which, to-day, sustains us in violations of our moral sense. If, by a dishonorable course of life, a man may have attained wealth, and that wealth has given him position, and during all this time he has managed to preserve a fair degree of health—possibly excellent health—the loss of property and of position attained through it, brings him to his reflections, and the doctors have no easy task to cure him of ills which almost surely overtake him. Then, if

not before, the voice of conscience, which has been contumaciously suppressed, keeps him awake at night-time, for the lessons which should have been received from day to day for years, are crowded upon him in one moment, and hypnotics and anodynes are of no avail in bringing sleep to his eyelids, and repose to his agitated nervous system. Nor is it sufficient that the moral nature be simply preserved, in order to make a man strong and noble. It must be built up. As physical exercise develops the muscle, so exercise of the moral faculties develops the moral strength of the man, and this moral strength makes him mentally buoyant, courageous, and happy; and this condition of mind promotes digestion, gives regular pulsation to the heart, action to the liver and kidneys, full and deep respiration, and muscular life and elasticity.

It is not necessary that a man should do as his conscientious neighbor, or as society dictates. So long as mankind are not run in one mould, there will be diversity of opinion, and each man will form, from investigation and reflection, a moral standard, considerably his own, or at least modified by his individuality. It is not what others say of us individually, or what people of other nationalities say of our nation, that will make us great, powerful, and happy. It is what we can *feel* regarding ourselves; it is the self-respect which a noble life creates; if our consciences can unequivocally pronounce the verdict—**RIGHT**—we are at once invincible—we are happy—we are healthy. The applause of others may tickle our vanity, at the moment we think it misapplied; but the applause of conscience sinks a shaft of moral strength, an unfathomable pleasure, down into the very soul's centre.

It does not simply dwarf a man morally to devote his entire energies to the accumulation of wealth, or the attainment of some other selfish object. It changes his physiognomy, or at least prevents it from acquiring a look of nobleness. An individual may not be legally dishonorable, while straining every nerve for the accomplishment of a selfish purpose, but the simple neglect of his moral nature makes him less a man, not only in a moral but in a physical sense. The nervous stimulus, or life force, has been consumed for the realization of the one object of his ambition, and the various organs of the body have been cheated of that which belonged, in part, to them, so that a dwarfed soul looks out of a body which has not been healthfully developed. He may not be a shrunken man physically, he may be fat—plump as an

FIG. 13.



A MAN WHO HAS NEARLY WORN HIMSELF OUT IN THE SERVICE OF THE DEVIL.

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alderman ; if so, much of the vital forces he wastes in his aggrandizement are needed to spiritualize this gross corporeity. Have you never noticed how much difference there is in the physical appearance of a good fat man, and a fat man who has neglected his moral development ? From the former, the soul shines out like a light from a window ; the latter has no more spiritual radiancy than the wax figure of a sixpenny showman. So that sins of omission, as well as of commission, against the moral nature, affect the physical well-being. There is no one way, perhaps, in which the moral man is more tortured than in the pursuit of wealth and position. In fact, this part of man's nature is often sacrificed entirely for the realization of these objects in our competitive world.

HOW IT WAS VIEWED BY A NOTED PREACHER.

FIG. 14.



"ONE WHO HAS GAINED NOT ONLY  
AVIDUITIOUS, BUT INTELLIGENCE  
AND GOODNESS."

The late Henry Ward Beecher, in one of his sermons, presented something interesting in this connection. "Did you ever," he asks, "see men made in this world? They had no great wisdom; they had no great honor; they had no great heroism; they had no great patience; they had no great meekness; they had no great wealth of love; but they had a certain muck wisdom; they knew how to thrust their hands in where dirt was to be moulded; they knew how to amass property; they knew how to construct ships and houses; they had a kind of ferreting eye, a sort of weasel sagacity; they were keen and sharp; they were said to be prosperous, thriving men; they were being built up according to the estimation of men. Give a man five thousand dollars, and you have laid the foundation on which to build him—you have got his feet built; give

him ten thousand, and you have built him up to the knees; give him twenty five thousand and you have built him to the loins; give him a hundred thousand, and you have built him above the heart; give him two hundred thousand, and he is made all over. Two hundred thousand dollars will build a man in this world; two hundred and fifty thousand will make a good deal of a man; five hundred thousand makes a splendid fellow, as the world goes. The great trouble, however, is that although the materials may not be very costly, as God looks upon them,



men find it difficult to build themselves in this way. Besides, they are very easily unbuilt. Where a man is merely what he owns, it does not take long to annihilate him. You can take a man's head off with a hundred thousand dollars; you can cut him in two with two hundred and fifty thousand; you can annihilate him with a kick of five hundred thousand, so that there would be nothing left of him but smoke!

"There are thousands of thousands of men, of whom, if you take away their houses, and ships, and lands, and fiscal skill, and such other qualities belonging to them as they will not want in Heaven, and cannot carry to Heaven, there will not be enough left to represent them there of righteousness, and godliness, and faith, and love, and patience, and meekness, and such like qualities. They have used all these qualities up for fuel for their machine. It has been their business in life to sacrifice probity that they might be rich; that they might gain power and influence; that they might make their hold on the world broader and stronger; and if they cannot carry forth these things which have been the objects to the attainment of which they had devoted all their energies, what is left for them to go out of life with? You see not only single specimens, but whole ranks of the dwarfed, insect class of men, patting each other on the shoulder, registering each other, and speaking of each other as 'our first men,' 'our largest men,' 'our influential men,' 'our strong men;' and yet, if you were to take away from them that of which the grave will divest them, you could not find them even with a microscope!

FIG. 15.



"THE REVERSE OF THE OPPOSITE ILLUSTRATION. BEHOLD THE CONTRAST."

"Do you not know just such men? If you were to think of those belonging to your own circle of acquaintance, and ask, not what this and that man are worth as factors in material things, but what they are worth as God looks upon them, what they are worth when measured by their righteousness, and faith, and love, and patience, and meekness, those things which are to make up our manhood

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in the eternal world, would you not find among them those of whom, if their selfishness, their heartlessness, their grasping skill, their worldly wisdom were taken from them, there would be scarcely any thing left ? ”

### NO GREAT NAMES ON FENCES.

It often happens that such men—men who, instead of making great names by pursuing some moral or beneficent object, simply write their names on checks, business receipts, carve them out on trees, pencil them out on barns, on walls, and on the rude partitions of summer-resorts—awaken to a consciousness of their moral impoverishment after they become somewhat sated with wealth and petty enjoyments ; and then there is a summary precipitation ; a break-down of energy, of pride, of ambition, of appreciation of what they have attained, and so much disappointment and mental wretchedness, that health fails, and oh, how hard it is with hygiene, with tonics, with therapeutical electricity, with every means science and skill have discovered, to build up such men ! They are the worst physical wrecks that enter a doctor's office ; and although they say they would give all they possess for physical health and mental quietude, they cling tenaciously to the gold they have so long worshipped. How can they afford to part with it ? All their generosity, all their love of neighbor, all their love of humanity, and every good quality they brought into the world with them, have been melted into the glittering lump.

Although, as before remarked, there is a greater tendency to sacrifice the moral nature in the pursuit of wealth and position in this world of pride and competition than in any other way, there is a manifest carelessness in regard to the preservation and development of the spark of nobleness within us in every department of life. Few men and women, comparatively, are fully truthful. Few treat their neighbors with exact justice ; too many sacrifice peace of mind for momentary pleasure ; thousands are daily and hourly doing what they *know* to be wrong. After all this violation of the moral sense come self-accusation, remorse, wretchedness, loss of sleep, loss of nervous vivacity and strength, and finally the whole system becomes more or less affected by the committal of sins for which punishment is only looked for beyond the present life, when it is hoped an escape may be effected through “ the vicarious atonement.” Present chastisements are overlooked, or attributed to other causes. People are often ill without knowing the cause, when, if they would turn their eyes inward and examine themselves searchingly, they would find that their physical discomforts arose from discords and inharmonies resulting from doing injustice to a neighbor, for wantonly letting slip a glorious opportunity to make some one happy.

Nations, as well as individuals, suffer from wrong-doing. Governments convulse and cripple their power, and shatter their *constitutions* by acts of injustice. It seems to me that nothing can be surer to end in discord, war, and bloodshed than despotism. Let any body of organized men prevent some other men from enjoying the privileges they arrogate to themselves, what more natural than for those oppressed men to conspire for the assassination, or, at least, overthrow of their oppressors? What can be a more dangerous element in one people than the existence among them of another people, who, for some reason not founded upon justice, are denounced as not so good, not so intelligent, not so capable in any sense, and for which they are denied privileges in the pursuit of happiness which their more powerful neighbors maintain for themselves? Can we reasonably hope to outlive conspiracy, war, and bloodshed, till we take our neighbor by the hand rather than by the throat? Considering the prevalence of conceit in this world, are any of you quite sure you are any better or more intelligent than the man you are holding your foot upon? and if so, is it not clearly your duty to take your foot off, give him a helping hand, and the widest opportunities and incentives for culture? Would it not be better to devote the money you are paying the soldier or policeman to keep him in vassalage, to his education and elevation? Some one has said: "A conscience is needed for the age, as for the individual—a power which shall reveal it to itself, and arouse and convict it." If, to-day, every ruler on our planet were making it the one great aim of his life to give equal religious, political, and social rights to all people; if oppressions were lifted from the hearts and shoulders of all men, if every individual would see his neighbor's rights as clearly as he discerns his own, the clash of arms on the battle-field between contending nationalities, the voice of intolerance between differing religionists, disputes in questions of law, the mutterings of men in petty strife, would all be swallowed up in one grand millennium of happiness and kindly feeling, which would go far toward promoting individual health and national greatness. This, you may say, is an ideal picture, and cannot be realized, but self-improvement will do it. If each one of us will bestow a portion of that labor and criticism upon ourselves which we put forth professedly to improve our neighbors, the object aimed at will in time be accomplished. Nations are made up of individuals, and, consequently, it is only necessary that every person know how much his own health and happiness depend upon those of his neighbor, and set himself about making himself more just, more truthful, more tolerant; to make society, nation, and government what each should be. We are apt, too, to say, our neighbor will not adopt the Golden Rule, and that, therefore, we will not. This is mainly the reason why a better condition of things is not attained. Every one is

waiting for another. Let every one who feels the first impulse toward self-reformation, inaugurate the work at once. If none of his neighbors do, he will find a full compensation in the mental and physical benefits that accrue to himself, and if he suffers from injustice from others, he certainly does not suffer from injustice to himself. One thousand such men scattered over the world in one generation, would become ten thousand in the next, and might, in a few generations, be counted by millions. Why hesitate because such a work cannot be accomplished in our life-time? Because of the disposition of men to wait for each other in undertaking the work of self-improvement, the world is now filled with dishonorable retaliation. I will relate an instance in point. Standing at the counter of a tradesman, while the latter was telling a customer what a smart trick he had perpetrated

FIG. 16.



GODDESS OF JUSTICE.

upon some one who had cheated him, I was witness to the narration of the dishonorable feat, during the telling of which his eyes sparkled with revengeful delight. He concluded with the triumphant interrogatory, "Didn't I serve him right?" This seemed as much directed to me as to my fellow-customer, and I felt morally bound to respond, when the following colloquy ensued:

"I don't think you did."

TRADESMAN—"Well, I do, for he is the biggest scoundrel in the city; and I always like to get the start of such men. He is always looking out for a smart game of grab."

"But of whom are dishonorable people to learn lessons of honesty, if every one who is defrauded by them, retaliates when opportunity offers?"

TRADESMAN.—"That is all very nice, but I am not the man to let a good chance slip to get even with the fellow who comes a big thing on me."

"Well, then, you are only confirming the usual opinion of dishonorable men, that 'all men are dishonest,' and your retaliation on him will lead him, when opportunity presents, to again retaliate on you, and so on indefinitely, till death ends the warfare. Perhaps if you had reminded him of the chance presented to 'get even with him,' and spurned it as something you could not stoop to, it would have aroused the sleeping sense of honor within him; but, if not, he could not justify his course of rascality with the reflection that he was as good as other men, for he would have, for once, at least, met, in a business way,

one man who was above both petty revenge and dishonesty. In my opinion, sir, you missed a golden opportunity to do a neighbor good."

The colloquy ended with a muttering response, which was not quite audible, but the tradesman, after all, was only practising a pretty well-established commercial code. Even when money is not an object, so dominant is the passion for revenge, business men often play financial tricks on their fellows, simply to "pay them off in their own coin" for some previous transaction of a similar kind, in which they were the victims. With this spirit of retaliation in the commercial world, where is fraud to end?

There is no one passion so dwarfing to man's moral growth, and, consequently, to his perfect physical development, as revenge. It whittles his soul right down to a pointed poisoned arrow, with which he is ever ready to pierce his offending neighbor. It plants in his eye an expression as fierce as the serpent's tongue; it shrinks the muscles of his face, and gives his lower jaw an unseemly protrusion; it makes him a stockholder in "hell upon earth," and his neighbors unwilling sharers in the dividends. A revengeful man has that within him which destroys capability of self-happiness, and all comfort to those who are compelled to come in contact with him.

Perhaps it is something that many have not thought of, but it will be found on experiment that nothing pays better, physically, as well as morally, than the cultivation of the moral nature. One gets his pay as he goes along. As remarked before, he is recompensed in a happier mind, and better physical health, and there are those coming after him whose happiness should be considered as important as his own, and the labor to promote which will make his soul larger, his nervous system more harmonious, his blood richer, and his muscles stronger, for is it not apparent in the light of this essay, that a peaceful, just, generous mind, and a clear conscience, strengthen the whole animal organism? In the language of Pope:

"Let Joy or Ease, let Affluence or Content,  
And the gay Conscience of a life well spent,  
Calm ev'ry thought, inspirit ev'ry grace,  
Glow in thy heart, and smile upon thy face."

### The Food We Eat.

Considering the fact that man by habit is omnivorous, and almost as much so as the pig, and that he eats about eight hundred pounds of food, exclusive of fluids, annually, it ought to surprise no one when I say that many derangements of the blood arise from the use of improper food. Look how directly the food is transformed into blood. It is taken into the mouth and masticated, into the stomach and digested, and then passes down into the lower stomach, where it meets the pancreatic fluids, and is sucked up into a duct, and carried directly into

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the blood at the angle formed by the great jugular vein on the left side of the neck, and the principal vein of the left arm. Then see how directly it goes to the manufacture of bone, muscle, nerve, etc. Oliver Wendell Holmes, in the *North American Review*, has presented this change very happily. "If," he says, "the reader of this paper lives another year, his self-conscious principle will have migrated from its present tenement to another, the raw materials even of which are not yet put together. A portion of that body of his which is to be, will ripen in the corn of his next harvest. Another portion of his future person he will purchase, or others will purchase for him, headed up in the form of certain barrels of potatoes. A third fraction is yet to be

FIG. 17.



"FLYING KNIFE AND PORK."

gathered in the Southern rice-field. The limbs with which he is then to walk will be clad with flesh borrowed from the tenants of many stalls and pastures, now unconscious of their doom. The very organ of speech, with which he is to talk so wisely, plead so eloquently, or speak so effectively, must first serve his humble brethren to bleat, to bellow, and for all the varied utterance of bristled or feathered barn-yard life. His bones themselves are, to a great extent, *in posse*, and not *in esse*. A bag of phosphate of lime which he has ordered from Professor Mapes for his grounds, con-

tains a large part of that which is to be his skeleton, and more than all this, by far the greater part of his body is nothing after all but water, and the main substance of his scattered members is to be looked for in the reservoir, in the running streams, at the bottom of the well, in the clouds that float over his head, or diffused among them all." The rapidity with which the food of to-day is incorporated into the body of to-morrow, should make us prudent in what we eat, if we would preserve our blood from impurity, and the atoms composing our bodies from disease. How prudent the human family is, may be seen by sitting at the tables of various peoples, civilized and barbarous. At home we are treated to all sorts of mixed dishes, seasoned with condiments, and saturated with the oleaginous juices of swine. Few of us stop to reflect that there may be as much antagonism in the stomach between the various kinds of flesh taken into it, as exists in the living world between the living bodies whose flesh we eat. A fashionable dinner comprises about half a dozen courses of different animal food; in some cases oysters on the half shell, turtle soup, then fish of some kind, then roast beef or turkey, with side dishes of mutton or lamb, veal or pork, etc. It cannot, perhaps, be demonstrated, but is it not

reasonable to suppose, that each one of these meats possesses a latent magnetism, as individual in its character as when animated by life. If so, the stomachs of some people have, every day, to conciliate and make up a happy family of a great diversity of magnetic elements. To live fashionably is to live improperly.

FIG. 18.



A MARKET SUITED TO EVERY VARIETY OF TASTES.

Now let us step intrusively into the kitchens of our neighbors. John Chinaman feasts his stomach on cats, dogs, wharf-rats, sea-slugs, sharks, bats, and caterpillar soup. Australians, and many other people, eat snakes, kangaroo rats, mice, maggots, etc. The Japanese prefer green peaches, apricots, and plums, to ripe ones, as an offset, I suppose,

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to our eating green cucumbers. A traveller among the Indians of the Rocky Mountains, or a guest of the people of Zanzibar, will smack his astonished lips over puppy stew, without knowing what it is made of. One who visits Africa, may have a plate of tender young monkey ; while the people of the Arctic treat their visitors to a diet of putrid seal's flesh, putrid whale's tail, reindeer's chyle, train-oil, whale's skin, and partially hatched eggs. The native of Surinam eats toads, and the Hottentot considers roasted caterpillars to be savory as sugared cream. Frogs are eaten by the French, by the Chinese, and by many people in both Europe and America. The French long ago took to eating snails, having found their flavor superior to that of frogs. One hundred thousand are daily supplied to Paris by Burgundy and Champagne alone. "In the interior of Mindanao, one of the islands of the Philippines," says a newspaper writer, "the Maczayns know nothing of the succulence of snails, but delight in fat grubs from the trunks of trees, eaten as we eat oysters, alive and shrinking." On the Maguey plant in Mexico, a large yellow worm thrives, which the native Indian eats, and calls the dish Maguey butter. A *Tribune* correspondent is responsible for the statement that the cultured but ill-fated Emperor Maximilian was induced to try it. In brief, among the many strange things used as food, not already mentioned, may be named : Elephant, hippopotamus, giraffe, zebra, antelope, wild ants, leopard, lion, alligator, crocodile, eggs of reptiles, lizard, wild-cat, panther, wolf, opossum, musk-rat, rat's brains, porcupine, bird's nest, locust, grasshopper, spider and nearly every insect ; and the Chinamen are so given to domestic economy as to eat the chrysalis of the silk-worm after the cocoon has been wound off. In New York, the testicles of young animals are considered a dish for an epicure by many citizens. Charles Louis Napoleon Achille Murat, son of the great French general, who spent the closing years of his life in Florida, and who had tried all sorts of eating, declared as follows :

"Horse-flesh, good—dog, fox, and cat, only middling—skunk, tolerably good—hawk, first-rate—crow, second-rate—pigeon, jay-bird and blackbird, tolerable, and," he added, "though I have no prepossession, buzzard is not good."

Now, nearly all the foregoing animals, insects, etc., contain the true constituents of food, and many of them are not unwholesome. Some, indeed, which seem revolting to an educated taste, are better and purer for aliment than others which we regard as above criticism. To sustain life, we simply need food which possesses saccharine, oleaginous, albuminous, and gelatinous properties, combined with a proper admixture of salt, sulphur, iron, lime and phosphorus. But what we should do is to avoid food which, possessing all the necessary alimentary elements, is also tainted by disease,



One of the most common causes of blood impurities is the indiscriminate and reckless use of pork. It has been said that all things were created for some wise purpose. This is undoubtedly true, but hogs were never made to eat where a high state of civilization obtains.

FIG. 21.



THE USE OF SWINE.

"And when they were come out, they [the devils] went into the herd of swine: and, behold, the whole herd of swine ran violently down a steep place into the sea, and perished in the waters."—*St. Matthew*, viii. 32.

We read that Jesus of Nazareth used them to drown devils; they can never be appropriated to a more beneficent use. As an article of diet, pork exerts a most pernicious influence on the blood, overloading it with carbonic acid gas, and filling it with scrofula. The hog is not a healthy animal. From its birth it is an inveterate gormandizer, and to satisfy its eternal cravings for food, every thing in field or gutter, however filthy, finds lodgement in its capacious stomach. It eats filth and wallows in its filth, and is itself but a living mass of filth. When, therefore, it is remembered that all our limbs and organs have been picked up from our plates—that our bodies are made up of the things we

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have eaten—what free pork-eater will felicitate himself with the reflection, that, according to physiological teachings, he is physically *part hog*. “We have been served up at the table many times over. Every individual is literally a mass of vivified viands; he is an epitome of innumerable meals; he has dined upon himself, supped upon himself, and in fact—paradoxical as it may appear—has again and again leaped down his own throat.”

From the earliest history of swine, they have been regarded as more subject to scrofula than any other animal. This disease, so peculiar to the hog, before it received a name, so far ante-dated the same disease in the human family, that when it did make its appearance in the latter, it was named after the Greek name of swine, as best expressing its character. There are various diseases peculiar to certain animals. Cats are subject to fits; dogs, more than other animals, to hydrophobia; horses to glanders and heaves; the cow to consumption and hollow-horn; sheep to the rot; fowls to the gapes, swelled head, and blindness; and scrofula is the prevailing disease among swine. Many of the diseases common to animals, and which render them unfit for food, are plain to be seen by the most ignorant butcher, and this is true also of some of the grosser diseases of swine. There are parasitic infections discoverable only by the careful observer with a microscope, which, if present in flesh, make it dangerous as well as undesirable food, but further, the quality or state of the tissues which is worthy of being called scrofulous, may exist without being discoverable “on sight” of the slaughtered carcass, or by microscopic study of bits taken from it.

Knowing, therefore, the constitution and habits of the porcine animal, it is questionable whether any slaughtered product therefrom can ever be considered wholesome and entirely free from the scrofulous quality, except, perhaps, it be bacon that has been thoroughly smoked and disinfected before being baked to a crisp.

It is apparent, however, that when scrofula may be communicated simply by habitual contact with a scrofulous person, the contact of scrofulous food with the mouth and stomach must inevitably inoculate the system of the imprudent eater. One fact regarding pork is well known to all physiologists. It is, with few exceptions, the most indigestible food that can be taken into the stomach, unless it be in the form of smoked bacon.

Again, pork is charged with being wormy. It killed a great many persons in Germany, and not a few in other countries, including our own. Many years ago a consul to Denmark wrote our Secretary of State all about it, and scientists, on both sides of the Atlantic, got out their microscopes, rubbed up their spectacles, and after examining the flesh of the arraigned porker, found he possessed imps of probably the same devils which were cast into his progenitors on the hill-side. The illustra-

tions in Figs. 20 and 21, show how these fellows appear under the microscope. They are called *Trichinæ*, and the disease they produce in man is denominated *Trichinosis*. The parasites are so minute that they can make their way to any part of the system, and a writer who has witnessed their effects thus describes them :

"This perforation of parts by millions of microscopic worms, is attended with symptoms more or less violent, depending upon their numbers, and the strength and health of the victim. While passing the coats of the bowels, violent purging often arises, simulating arsenical poisoning, and many people have been unjustly suspected of this crime, when persons eating food prepared for them have been thus alarmingly seized. As the worms make their way into the muscles, pains like those of rheumatism, cramp, weakness, or entire loss of power, resembling paralysis, ensue ; and when the numbers of trichinæ are large, wasting, exhaustion, and death follow. Those who escape with a few of these disagreeable tenants, suffer in a smaller degree from similar symptoms, but gradually recover, and a small portion of their muscles, removed and magnified, reveals the trichinæ arrived at their destination, and undergoing the various stages of calcareous encystment."

#### THE PORK PARASITE CAUSES INTERNATIONAL CONTROVERSY.

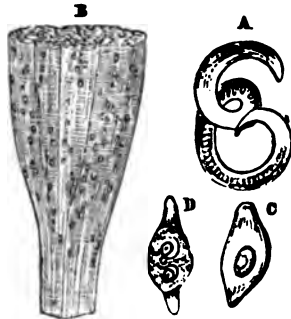
Since the lively interest awakened among scientists by the discovery of trichinæ as the cause of what seemed like epidemics of disease in Germany, pork has been a constant source of international dissension mixed with tariff issues. The German, the French, and many other European nations, for some time prohibited the importation of American pork, on the ostensible ground that it was largely infected with trichinæ, but, in fact, to protect home industries, till our own country found it necessary to set various commissions of experts at work to discover what basis there was for such charges. They always found that some percentage of American hogs were "guilty." Professor Dettmers, of the Agricultural Department, acknowledged finding the parasites in four per cent. of hogs slaughtered in Chicago, but the experts claim that this is a smaller percentage than is found in European examinations of the same kind. However, to allay foreign prejudices and make our hog products marketable abroad, Uncle Sam established a system of constant supervision of the wholesale slaughter and packing houses, for the purpose of thoroughly excluding all possible objection on the score of contaminated pork, but the difficulty is not yet settled.

Dr. Rudolph Artman, a German veterinarian, who was once employed in meat inspection in Germany, has been examining into the methods of the Bureau of Animal Industry of our country, and considers it a gigantic humbug—carried on at a cost of half a million dol-

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lars per year—a decision quite in conformity with charges of the *New York World*. It appears that the examination, if not merely a matter of form, is far from thorough, and so far as the people of this country are concerned, there is no protection by keeping trichinous pork out of the market. Dr. Salmon, Chief of the Bureau, believes that it is unsafe to rely on microscopic examination of the meat, and that the only safety lies in thorough cooking. He claims that if all such food be

FIG. 20.



TRICHINÆ, CYSTS AND MEAT.

Fig. 20 shows the separated worm (A), the separated sacs or encysted worms (C D), and a piece of meat highly magnified (B) with many cysts scattered through it.

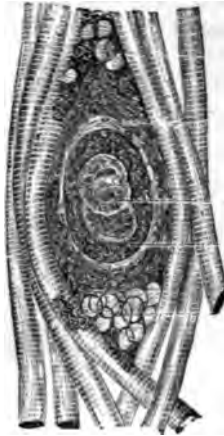
sufficiently cooked the microscopic examination is superfluous (except to pacify the foreign buyer); that the trichinous pork is just as good eating as any; and he further charges that in Germany, in spite of their careful inspection, far more people die of trichinosis than in this country, because the Germans have a fancy for eating raw pork, and because no microscopic examination can completely insure them against eating diseased pork.

On the other hand, Dr. Artman believes that the people of this country suffer far more than they know from infection with trichina; that the parasites do not always invade so quickly or numerous as to kill, and that in the many cases where they "go slow" and keep comparatively quiet, the victims become chronic sufferers from rheumatoid pains and other discomforts difficult to name or diagnose. He examined muscles taken from thirty dead human bodies, at Buffalo, and found trichinae present in ten per cent. Yet he is not at all sure that ten per cent. of our population is thus affected. Dr. Artman also denies that the food value of trichinous pork is just as good as that which is free from infection, provided it is well cooked, on the ground that the trichinae replace part of the muscle tissue with chalky deposits, and this is true, so far as it goes, but to the fastidious eater the knowledge of the presence of parasites, even if harmless because too well roasted to revive, would be apt to dull his appetite more than the fact that their chalky relicts diminish to some extent the food value. His relish for pork tenderloin will hardly be stimulated by the fact, now admitted by the Government Bureau, that all hogs which were found infected with trichinae, withheld from export, amounting to two per cent. of the whole number inspected, have been thrown on the home market for consumption, instead of being boiled down in the rendering tank, as

represented by the inspectors in charge. If, like the farmer who keeps small potatoes for home use, we reserve all trichinous pork for home consumption, we shall not be surprised to learn some day that one-tenth of all pork-eaters are entertaining more or less of the trichinæ parasites in their muscles.

If, as Dr. Salmon seems to admit, parasitic pork may escape the vigilance of the hundreds of lady microscopists employed to detect them, this government bureau is a uselessly expensive matter of form ; but his claim that safety is assured by cooking is denied by German scientists who find that in a large piece of meat the heat at the centre, during cooking, is not sufficient to kill the trichinæ therein. There seems, therefore, to be no solution of this international sanitary and trade complication, but any person can settle the problem for himself by declining pork foods. Of course, even when cooking fails to kill the encysted worms it is possible that persons of remarkably good digestions and unlimited gastric juices may be able to digest them, but it is a risk they would hardly take knowingly. It is reported that during a period of five years, when the people of New York City and Philadelphia consumed nearly fifteen million hogs, among 350,072 deaths recorded there were only six, three in each city, from trichinosis ; but since it requires a microscopic post-mortem examination to determine it, very likely many more deaths were due to this cause than thus appears.

FIG. 21.



ENCYSTED TRICHINA BETWEEN MUSCLE FIBRES.

In above figure the muscular fibres are shown pressed apart by a cysted trichina.

#### A HOG WOULD BECOME DISEASED BY EATING MAN.

It has been said that no animal was ever created which had an inherent proclivity to disease. This may be true ; but some animals from their earliest history have been diseased ; and none in the animal kingdom better illustrate this proposition than man and hog. And while I am firmly convinced that mankind are injured by eating hog, I am equally disposed to believe that the hog, if a healthy animal to-day, would in time become diseased by eating man. Both man and hog are intemperate eaters, and addicted to filthy habits. As for the latter, he is such a proverbial gormand, that no word in the English language so strongly portrays a voracious appetite as the term *hoggish*. Then his eating propensities are ever encouraged by the pork-raiser, who wishes to

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make every carcass as heavy as possible. Many farmers and other pork-producers put their pigs in close pens, to prevent their exercising and running off their fat, and in these close, filthy quarters, the grunTERS are systematically stuffed till they can hardly open their eyes. What would become of a human being so treated? Could a man be so confined and fed, and not become a diseased and bloated carcass? It is equal to a fashion they have in Germany, of putting geese singly in coops so small that they cannot stand up or turn around, and there stuff them with a kind of meal mixture every day, until they become loaded with fat. Then they are considered in good condition to kill

FIG. 22.



THE UNHEALTHY PAIR.

and eat. Can any creature in creation be treated in this way, or as swine are fattened, and not become diseased? What, then, may we expect of an animal which, from our earliest knowledge of him, has been scrofulous? It is related of Dr. Adam Clarke, that he had a strong aversion to pork, and that upon one occasion, when called on to say grace at dinner, where the principal dish was roast pig, he said: "O Lord! if Thou canst bless under the Gospel what Thou didst curse under the law, bless this pig."

### HOG AND HOMINY IN OLD KENTUCK.

A good-natured farmer writes me that he and all his neighbors are pork-eaters, and that the people of "Old Kentuck" have always been fed on "hog and hominy," and yet are perfectly healthy and blessed with longevity. I reply, blessed with longevity, perhaps, but not entirely free from disease. I am often consulted by these very farmers, who open by saying, "I am not sick, Doctor, but I am plagued with salt-rheum." Another writes, "I am the picture of health, and my neighbors would laugh at me if they knew I was applying to a physician; but I am troubled with catarrh." Another has piles, another worms, another rheumatism, another predisposition to sore throat, and so on; but all

claim to be in the enjoyment of the best of health ! But there are unquestionably pork-eaters who have no apparent disease whatever. Although the scrofulous impurities of their diet find lodgement, they remain latent in their systems, and are even transmitted to their children, without manifesting themselves in the parent stock. Those especially who till the soil, toughened by exercise, strengthened by pure air, and relieved of much diseased matter by active perspiration, may carry with them to a gray old age a scrofulous impurity without suffering from its presence. But how is it with their boys who enter counting-rooms in large cities, or adopt professions of a sedentary character ? Have you never noticed how apt these scions of athletic sires are to break down before reaching the meridian of life ? Other causes than these inherited impurities may often contribute to this result :

but if impurities do exist to any extent, will they not be more likely to be active, and obtrusively present themselves in the form of disease, internal or external, in the confined atmosphere of the store or office, than on the broad acres of the parental homestead ? It may be a question of no little importance, how much the diseases of young men

in villages and cities are derived from pork-eating progenitors, who pursued the healthful occupation of tilling the soil and feeding the pig.

My own opinion is that trichinæ are not liable to revive and become mischievously active in the human system after pork is thoroughly cooked—done through—unless there are impurities to resuscitate them and encourage their reproduction. The reason they affect the hog so extensively is because he is an unclean beast, although it is true that the same parasite has been found to some extent in other animals, such as the rabbit and cat.

If a man be scrofulous, or have other impure affections of the blood, the trichinæ are liable to be resuscitated and reproduced in the system, no matter how much they may be toasted, short of absolute scorching. Microbes only thrive in corruption, and when they get into a wound, confine their operations to the diseased tissue. So I confidently believe it is with the trichinæ ; they only have an affinity for such people as contain inflamed or corrupt blood, in which the health of the muscular fibre is involved, and, perhaps, such are the bad habits of the human family, and so prevalent the disease of the fluids, that any person, however healthy apparently, may be likely to be attacked with trichinosis if pork, or ham, containing the parasite, be eaten raw.

FIG. 23.



INFECTED MUSCLE.

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Another worm or parasite that is common to both hog kind and mankind is a species of tapeworm, the *tænia solium*. During its sojourn in swine flesh this parasite infests it in the form of little cysts that give the meat a mottled or "measly" appearance. Measly pork is tabooed wherever recognized, but much of it gets on the market nevertheless, and so into human stomachs, where, after the cysts or sacs are partly digested, the inclosed worms are let loose to set up business in a new style, and under another name as tapeworms. The tapeworm in man is more easily discovered, and less fatal by far than trichinosis, and it is less to be feared, because it can be routed out of its abode in the intestines, but few victims of tapeworm enjoy a sound state of mind after learning that they have taken in a lodger and boarder that pays no rent, and they willingly swallow many a horrid dose to rout him. It is fair to say that pork meat is not the only possible source of taking in a tapeworm. It may also be acquired from eating too rare beef or mutton, since the flesh of these animals is sometimes "measled" or infested with the larva!, encysted, (not dead but sleeping) forms of this and other species of tapeworms. Horse meat offers great advantages over other forms of flesh food in that it contains no such parasites, and no tuberculosis. If this fact were generally known, and the superior cleanness of horse meat appreciated, it ought to sell at a premium.

In closing what I have to say regarding pork, I would seriously advise all who will use the meat of this unclean beast, despite the objections to it herein offered, to cook every particle of it to a crisp. Bacon and ham, which are the most toothsome of all pork products, can be so treated without difficulty, and if pork sausages are to be eaten, they should remain in the hot frying-pan till they pop open and give evidence of having been cooked through and through.

### PLENTY OF MORE WHOLESOME FOOD.

Mutton ought to be universally substituted for pork. It is less liable than the latter, or even beef, to augment uric acid in the circulation of those who are predisposed to diseases resulting from an excess of that acid. It is more easily digested, and may be regarded as a healthful meat. Besides, it can be produced at much less expense than pork among the farmers, and yields more nourishment. Sheep need no corn, and can be kept during the winter on hay, turnips, beets, etc. True, pigs will eat what nothing else will, and consume all the slops in the kitchen; but a great deal of corn, or other solid food is required to fatten them for the butcher. Besides, sheep will eat all that is fit for food from the kitchen slops, and their preparation for the slaughter-house is attended with trifling expense.

As a rule, the flesh of herbivorous is more wholesome than that of carnivorous or omnivorous animals. The use of animal food of every



kind has been pronounced injurious by many. That it is not necessary for the sustenance of man, in a normal state, I am fully convinced; equally satisfied am I that its moderate use is attended with no physical injury, but almost everywhere it is used to excess. Too much animal food inflames the system, and overloads the blood with the red corpuscle. In our climate, and in Southern latitudes, little or none should be used in summer, and in winter there is enough heat-producing food

FIG. 24.



SHEEP—WHOLE SOME TO THE EYE AND WHOLE SOME TO THE STOMACH.

of a vegetable character to impart sufficient warmth to those preferring vegetable diet. Still, beef, mutton, lamb, poultry, and even horse-flesh may be regarded as wholesome for food, if not eaten to excess. Professor Saint-Hilaire, of Paris, strongly urges the introduction of the latter as an aliment. He says that during the great French wars, the celebrated surgeon, Larrey, was accustomed to give horse-flesh to the wounded soldiers, and that he attributed their cure in many instances to this nourishment. The ancient Germans were in the habit of eating horse-flesh, and to this day, shops for the sale of this meat, under the superintendence of a veterinary college, exist by authority in Copen-

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hagen. It is also resorted to by the poor of Vienna, while in Hamburg it commands a high price. The horse is considered a great delicacy in some of the southern portions of South America, where it is introduced at the festive board as a luxury, equal to a sirloin of beef. There can be no doubt of its utility and cheapness on the battle-ground, where the majestic steed is hourly falling before the destructive cannon-ball. Those who turn up their noses at the idea of eating horse-flesh, are requested to lead a horse from the stable, and a pig from the gutter, and ask themselves which is the more respectable looking candidate for the carver. [Since the foregoing was written, horse-meat has been adopted as an article of food by many in all civilized countries and much of it is being used in the United States.]

If I may be allowed a brief paragraph, to deviate from the legitimate purpose of this chapter, I will remark that the excessive use of animal food is a great *social evil*. It is a proverbial fact, that mankind are too much given to the brute diversion of fighting. Our halls of legislation are disgraced with personal encounters between gentlemen who are *supposed* to be far elevated above the brute creation, by their distinguished intellectual endowments. Now, we have as good authority as Professor Liebig, that meat makes men more pugnacious. He says : "It is certain that three men, one of whom has had a full meal of beef and bread, the second, cheese, or salt fish, and the third, potatoes, regard a difficulty, which presents itself, from entirely different points of view. The effect of the different articles of food on the brain and nervous system, is different, according to certain constituents, peculiar to each of these forms of food. A bear kept in the anatomical department of this university, exhibited a very gentle character so long as he was fed exclusively on bread. A few days' feeding with flesh rendered him savage, prone to bite, and even dangerous to his keeper. Swine grow irascible when fed on flesh, so much so that they will attack man. The carnivorous are in general stronger, bolder, and more pugnacious than the herbivorous animals on which they prey. In like manner, those nations which live on vegetable food, differ in disposition from those which live chiefly on flesh." Forbearance is a great virtue, and should be cultivated by every enlightened man. Had human beings been intended for fighting animals, their finger-ends would have been decorated with huge unbending nails, and their jaws distended with savage tusks, like the boar. The excessive use of flesh is not promotive of amiability, but rather leads man to forget his present duty, and his higher destiny. It excites those emotional faculties which are prone to dethrone reason.

An Edinburgh physician, Dr. Haag, in *The Hospital* undertakes to prove that the excessive use of meat leads to suicide. He attributes the disposition on the part of many unhappy people to

hasten their exit from the world to the presence of an excess of uric acid in the system, and this excess he believes to be due to the use of too much animal food. He does not quite prove his doctrine with evidence which would be accepted as final by a scientist, but when we admit that a meat diet renders the human family more pugnacious, it is not impossible that a man well fed on the flesh of other animals might exhibit his pugnacity in inflicting fatal wounds upon his own person as well as upon his neighbor's.

A noted Hindoo scholar, in an address before the Vegetarian Society of New York, said that his people in India believe "a diet of meat makes man restless and less self-controlled, like all carnivorous animals. He expresses the belief that the eating of flesh and the drinking of wine go hand in hand, and that a diet of meat conduces to selfishness and accustoms one to the butchery of innocent beings."

Much has been written, *pro* and *con*, as to the necessity of resorting to the animal kingdom for sustenance. It seems to me the vegetarians have the best of the argument. Vegetables possess all the necessary elements of food, and by combination or eaten in variety, impart more nutrition than animal diet. According to the investigations of Liebig, and other celebrated chemists, peas, beans, and lentils contain more of the blood-forming principle to the pound, than meat; wheat meal contains about as much, and oatmeal, barley meal, stale bread, and maize meal, about half as much; and when you seek the heat-forming principle, potatoes contain more than meat, while bread, peas, lentils, barley meal, beans, sago, maize, oatmeal and rice, yield double and treble the supply to the pound that animal food does. Nearly all vegetables provided for the table contain more solid matter to the pound than meat possesses.

#### FACTS REGARDING VEGETABLE DIET.

Facts sustain the vegetarian. A large portion of the people of Ireland, in their native home, hardly taste meat. They subsist upon potatoes, oatmeal, and cabbage. Many of the Asiatics mainly subsist on rice and vegetable oils. The Lazzaroni of Naples, with all their uncleanness, idleness, and vice, maintain a good physical appearance on a diet of bread and potatoes. The Turks live mostly on vegetables, fruits, and nuts. A traveller remarks: "Chops, substantial soups, joints, anything on which a Westerner could support nature, are never seen in a Turkish bazaar." We have people living in various parts of the United States who are practical vegetarians, and eschew animal food of every description, excepting it may be eggs, milk, and butter, and some of these people do not use the latter. I once met a hard-meated, healthy young Jew, who subsisted on Graham bread, fruits, and nuts; and to carry out his dietetic rules he hired a room and

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boarded himself, which he could easily do without cook or housekeeper. D. U. Martin, the vegetable wherryman, gymnast, and phrenologist, tested his strength and endurance by subjecting himself to all sorts of hardships and exposures while pursuing strictly a vegetable diet. He subsequently adopted an exclusively fruit diet, mainly apples, with what results I am unable to state. In June, 1899, Gus Egloff, a

FIG. 25.



THE VEGETARIAN BICYCLIST.

German-American cyclist of New York, only nineteen years old, rode 1,000 miles on Long Island roads in four and a half days, with only six hours sleep, while subsisting on a diet of milk, crackers, ice-cream and coffee.

Many years ago Dr. Bourne, a vegetarian of San Francisco, a gentleman then sixty-six years of age, walked a distance of nearly seven hundred miles, eating nothing on the way but "crackers baked from unbolted wheat flour, with a little fruit by way of dessert, and drank only cold water." At this stage of his journey, for he was going farther in proving the value of a vegetable diet, "he walked with an easy stride which," said a newspaper reporter, "would

bother half our young men to keep step with."

Charles W. Miller, of Chicago, a vegetarian, won the first prize at a six days' bicycle race in New York in 1897, in 1898, and again in 1899. "The score at the end of the race on December 10, 1898, was," says *Food, Home, and Garden*, "2,007 miles, while Waller, his closest competitor, scored 1,985 miles." In answer to an inquirer, he said: "My diet consisted of only oatmeal, boiled rice-pudding, custard, kumyss, and grapes; on the last day, milk, coffee, apples, and oranges. No meat, whatever, at any time. I never use meat in my races. No butter and no cheese were used."

"Mr. Miller," says the same paper, "was evidently not seriously fatigued, as on the last day of the contest he took one hour off the track, during which time he was married to Miss Hanson, also of Chicago, and then resumed the contest on the wheel, which continued until 10 p.m. At eleven o'clock Saturday morning, it was announced, amid much applause, that Miller had beaten his own record of a year ago by three miles, and after this he settled down to a methodi-

cal gait, and in two hours the substantial distance of eighteen miles assured him of victory over all his nearest competitors. We understand Mr. Miller's earnings were \$4,000 and a good Chicago wife! Thousands of spectators witnessed the contest, and the management reaped a handsome profit."

In Berlin, Germany, in June, of 1898, there was a notable walking race in which Karl Mann, a vegetarian, won a 70 (English) mile walking race in fourteen hours and eleven minutes. According to a magazine, entitled *Food, Home, and Garden*, there were 25 entries, of whom 17 were flesh eaters and eight were strict vegetarians, Karl Mann being one of the latter. "The weather was unfavorable, with rain in the latter part of the afternoon." With the exception of five or six miles of macadamized highway, "the road lay along poorly made country roads without footpaths." The result, as given by the magazine already named, was as follows: "1—Karl Mann, vegetarian, 14 hours, 11 minutes; 2—Emil Makowski, vegetarian, 14 hours, 32 minutes; 3—Fritz Badenstein, vegetarian, 15 hours,

FIG. 26.



THE VEGETARIAN PEDESTRIAN.

34 minutes; 4—Wilhelm Damm, vegetarian, 15 hours, 59 minutes; 5—Paul Schirrmeister, vegetarian, 17 hours, 6 minutes; 6—Herman Zerndt, vegetarian, 17 hours; 7—Friedr. Zahrt, *flesh eater*, 17 hours, 32 minutes. The six vegetarians all came in as certified by the judges, in excellent form. The only arriving flesh eater who finished more than half an hour after the two last vegetarians (notwithstanding their having made five miles more than he), after calling for brandy, put up in the village for the night!" Professor Goldwin Smith, of Cornell University, writing in the *Toronto Weekly Sun*, respecting this trial of pedestrian endurance, says: "In a 70-mile walking race in Germany the vegetarians have shown a remarkable superiority in endurance over the eaters of meat. There is nothing new in this. Extraordinary journeys are made by the Hindoo palanquin-bearer, whose only food is rice. There is probably a gradual tendency on the whole, to vegetarian diet. It does not appear that animal food is absolutely essential to any function of the human body or brain. No man

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did a better day's bodily work than the British farm laborer when he had no meat but a taste of bacon. No man ever did a greater amount of brain work than a monastic saint, who was forbidden meat—by the rules of his order. No man ever produced higher fruits of his imagination than Shelley, who was a devout vegetarian. A much greater amount of vegetable than of animal food can be produced on a given area. The inclination of taste as human nature grows more refined, points the same way. Homeric heroes ate masses of meat apparently without vegetables; and to the bard of that day the picture of the shambles is not less congenial than that of the harvest or the vintage. To us the details of the shambles are abhorrent. We require vegetables with our meat, while there is a tendency to disguise the meat itself by elaborate cookery. On the whole, it seems probable that progressive vegetarianism is the rule, though there will be no sudden leap, nor will the vegetarian think it his duty to enforce this habit on us by law."

It sometimes seems as if we only use meats as vehicles for conveying salt, sauces, and condiments to the stomach. People think they love the flavor of animal food itself. Just try it without salt, pepper, mustard, butter, or other seasoning, and see. Advocates of animal diet generally refer to the teeth, and some to the anatomical formation of the stomach, for evidences that our Creator intended that we should eat meat; but the teeth and stomach of the orang-outang resemble those of man, and yet he does not belong to the carnivorous or omnivorous species. Du Chaillu says, that notwithstanding his large canine teeth, the gorilla of Africa is a strict vegetarian. According to Cuvier, "man's teeth are frugivorous—the cow's herbivorous—the lion's, carnivorous—and the hog's, omnivorous," so that both sides claim that the indications of the dental organs favor their distinctive views of diet. We have the testimony of the great naturalist Linnæus, that "man's organization, when compared with that of other animals, shows that fruits and esculent vegetables constitute his staple food." In eating the flesh of animals, as I look at it, we get vegetables second-hand, and contaminated more or less by the diseases with which they are affected. There is, however, in animal food, a stimulating property which vegetables do not possess. Having heard of vegetarians being made slightly intoxicated by beefsteak, I once induced a vegetarian friend to try the experiment on himself, and he assured me it produced in his brain a sensation similar to that induced by a slight potation of alcoholic liquor. It is said that Irishmen who live exclusively on vegetables at home, on enlisting in the British army are sometimes attacked with what is called "meat fever," in consequence of their new diet being so much more stimulating than that to which they had been accustomed.

There is a supposed necessity, and possibly a real necessity in some cases, for the use, to some extent, of animal food. This undoubtedly



results from the habits of our ancestry. The child of an inebriate father often inherits his appetite, and cannot resist the temptation to drink intemperately of intoxicating beverages, and it may be easily supposed that the child of meat-eating parents may at least imagine he cannot live without meat. When, during a long line of ancestry, animal food has been the principal article of diet, the necessity may be actual instead of imaginary. He is like a patient who told me disease was his normal condition, and that medicine was his natural food! Opium eating sometimes becomes a necessity by the perversion of the system by narcotism. What-

ever may have been the original practice of mankind in the infancy of its development, I am confident the time will come when a more humanely developed and civilized humanity will look back upon us of this century as a race of cannibals. No man or woman to-day, of noble sentiment and sympathetic nature, unless the *habitus* of the market, and thus hardened by familiarity with such

sights, can pass the stall of the butcher with its display of trunkless heads of calves, pigs and cattle, and the bleeding and partly flayed carcasses of lambs and sheep, or look upon the white, but blood-stained apron of the meat-man, holding his monstrous knife, without a shudder, and a feeling of self-condemnation that he and she are accessory to this wholesale slaughter of innocent animals. "The dog delights to bark and bite;" it is the instinct of the cat to sneakingly assail and devour animals too weak to resist her prowess; it is in the nature of the huge boa-constrictor to swallow pigeons, rabbits and other small game by the bushel; it is the habit of the large fish to live upon the smaller ones, etc. But when we ascend from these lower species of the animal kingdom to the "noblest work of the Creator," may we not reasonably look for an end to this mutual carnage for the wherewithal to keep the vital machinery in action?

What excuse for man, who can shake from the tree above his head the juicy fruit which is ready to fall ripe into his hand; who can pluck from the vine clusters of delicious grapes containing all the elements of food, prepared only as Old Dame Nature can prepare them; who can plough up the rich sod, and produce by the planting succulent vegetables and fields of golden grain, and beneath the surface of the grim soil,

FIG. 27.



VEGETABLE FOOD.

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esculent roots capable of imparting warmth and nourishment to the body ; who can find in the rich meats of abundant nuts, and other oily products of plants and trees, all the oleaginous properties which animal fat supplies ; what excuse, I ask, for man, with all these luxuries at hand, loaded with the necessary alimentary constituents, to imitate the murderous instincts of the lower animals, and cannibally live upon animals less powerful than himself ! There is one excuse, and only one, that can be presented for a man of this century, namely : a meat-eating ancestry, and in some cases an ancestry of meat gormands. As before remarked, with some persons it seems to be an inherited necessity. But I have faith that man will some time outgrow this brutal appetite—this cruel physical necessity. The dawn of the “good time coming” cannot light up human hands and arms red with the blood of slaughtered animals, or overtake the athletic man picking the bones of tiny birds ! The ingenious Yankee has already invented a substitute for leather, and we have quite enough substitutes for ivory and bone. There are millions of men and women to-day who would give up a meat diet if they were compelled to slay the animals they eat. Stop for a moment and read

### HOW THE KILLING IS DONE.

The following is copied from a daily paper—it is headed : “How Cattle are Slaughtered—Sunday Scenes at the Abattoir.” The writer then proceeds : “On the arrival of cattle, they are transferred from the cars to yards, where usually they remain until sold or slaughtered. Before they are killed, eight or ten are driven up an inclined plane into the abattoir, where they are confined in pens about ten feet square. A row of these pens extends across the building, directly back of the dressing racks. When an animal is needed, he is either drawn up with a rope attached to his hind leg, or he is speared. If the cattle are wild, the executioner mounts the stall, and takes his stand immediately over his victim. His spear is a rod of iron, six feet long, an inch in diameter, sharpened at the end like an oyster-knife. The ‘killing spot’ is just behind the horns, on the neck, which the spearsman frequently does not hit. To see a person throwing one of these spears into a pen of cattle is sickening. Often several bullocks are pierced in the forehead or eye, and their faces are streaming with blood long before the death of a single one ! The wounded, after waiting from ten minutes to an hour for their turn, are again attacked, and killed one by one, the survivors receiving fresh wounds on every attack ! A Western expert,” continues this writer, “styles this treatment the devilish torture of a hanging butcher.” (If it only were, I should say Amen ; but it seems to be the devilish torture of innocent animals.) “Cattle are not the only sufferers, but the swine are also pierced, and often plunged into scalding water before they are dead ! The butchers say that the spear



is used for killing wild cattle only ; but one who frequents the abattoir says that the contrary is the fact. Even the windlass is a barbarous instrument. With this a noose is fastened to the animal's hind leg ; the machinery is started, the bullock tumbles over, and after being swung up alive, his throat is cut. In Cincinnati butchers knock their hogs on the head with a long-handled hammer, but in Chicago," the writer thinks, "dumb brutes are killed humanely. A rope communicating with a windlass passes through a ring in the floor, and is made fast to the bullock's horn. Then a man turns a crank, and the animal is gently led into the slaughter-house, where, at one blow, he falls to the floor. The executioner never misses his mark, because the bullock's head is held immovable by the ring."

FIG. 28.



THE ANIMALS WE SLAUGHTER.

Farmers who do the slaughtering upon their own premises, for their family use, generally treat their animals with greater gentleness ; but under the best of circumstances, cutting the throats of lambs, knocking cattle on the head, piercing the jugular of the hog, guillotining poultry with an axe, cannot be done in any way to avoid shocking the sensibilities of people who have kind hearts and educated heads. It is in vain to talk of this murderous work being done humanely, and such are its effects upon those styled butchers, that they are not allowed, in some States, to sit upon a jury in cases involving the life of the criminal !

Then, for a moment, look at the extent of it. I saw in a daily paper some years ago, that on the east side of the City of New York,

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alone, there were annually slaughtered about 239,000 cattle, 1,000,000 sheep and lambs, and 250,000 calves, and this, remarked the writer, comprised only about one-third of all the slaughtering in this one city. And this destruction of innocent domestic animals increases with the growth of the city year by year, and is doubtless much greater now.

The late Henry Bergh, who effected much in mitigating the cruelties practised on animals, writing to Dr. Holmes, remarked as follows: "I believe, as you do, that the abolition of the use of the flesh of all animals would result in physical and moral improvement to our race. Having been in countries where meat is rarely, if ever eaten, and having observed the superior endurance of fatigue, as well as gentleness of character of the inhabitants, I feel convinced that the slaughter of dumb animals, and the devouring of their flesh, account for the largest share of the moral and physical diseases which affect mankind. I have had an Arab of the desert run behind my horse a distance of twelve miles without betraying the least sign of fatigue, and the cheerful fellow had never tasted meat. For my own part," continues Mr. Bergh, "I can eat meat because of habit. But then the least appearance of blood, by reason of insufficient cooking, shocks my sensibilities, and causes my stomach to revolt." Let us hope that every generation of man may consume less animal flesh, and feed his children with still less, until the human race shall outgrow a habit which makes him little better than a cannibal.

### CANNIBALISM WITHIN THE HUMAN BODY.

Under this head, *Cosmos*, a Parisian publication, mentions something which the reader probably never thought of, and I will reproduce it here: "It is a revolting and nevertheless incontestable fact that certain parts of the body live at the expense of others, which they—so to speak—devour. These cannibalistic organs are the brain, the heart, and the lungs, which, to fulfil their functions, need to be fed constantly, otherwise they would die. When this nourishment is wanting, they get it from other less vital parts of the body. The heart, for example, has an enormous amount of work to do, and consequently must receive a large amount of nourishment. In the ordinary course of things, the blood brings to it from the stomach the necessary quantity; but after one has fasted for a certain length of time, the stomach can no longer do its duty of nourishing the heart, and the blood is obliged to find elsewhere the food necessary for the life of this essential organ. It goes, therefore, to the fatty portions and to the muscles of the trunk and limbs. First it applies to the liver, where it finds a provision of sugar that is sufficient for several hours; then it resorts to the deposits of fat stored up in various parts of the body—that is why one's clothes become too large when he is famished. When all the fat

has been devoured, the blood takes what it wants from the muscles, so that finally little but skin and bone is left, while the brain, the heart, and the lungs preserve their former size. And we surely cannot complain of this ; it is the salvation of the miners who are buried in a caved-in mine, of the sailors who have been cast by shipwreck on a desert isle, of the polar explorers whose provisions have given out ; for even if their secondary organs suffer, their brains and hearts preserve their energy, which is the essential thing."

#### FOOD FOR THE FAT, AND FOOD FOR THE LEAN.

There is a valuable hint in the foregoing for those who complain of being, or of becoming, too fat. The demonstrated fact that the most vital and important organs of the system will, if necessary, draw sustenance from the less vital parts, suggests fasting for the fat or obese. The writer of what is said of "Cannibalism Within the Human Body" might have added the nervous structure to the brain, the heart, and the lungs, for the former has been found to undergo little or no shrinkage under a prolonged fast. It may exhibit much less activity. There would naturally be less nervous force generated and exhibited in the movements of the body and in the stimulation of cerebral action. But the nervous structure is but little affected by fasting. This being the case, frequent fasts with moderate use of food in the intervals would greatly reduce superabundant flesh in persons of vigorous health without positive harm. Then the right selection of foods, while indulging the appetite, can be made to contribute to the reduction of obesity. The fat-making foods are fats, starch, and sugar. A diet largely made up of raw and juicy fruits, such as apples, grapes, peaches, oranges, gooseberries, melons, etc., omitting the more nourishing fruits, such as bananas, figs, and dates, will be likely to be attended with satisfactory results. If addicted to peanut eating let these little fattening nuts alone. Abjure all nuts, for they are noted for their oleaginous property. Vegetables which are not sweet or farinaceous are allowable and, in brief, nearly all green garden stuff. If meats are taken, avoid the fatty portion. If butter be eaten, let it be with extreme moderation. If wheat bread, let it be cut in thin slices and thoroughly browned in the oven. M. Philbert very properly says: "That the temperament of a person is also to be kept in view in the selection of animal food. The lymphatic should have a red diet, such as beef, mutton, pheasant, etc., while one of the sanguine temperament should have a white diet like veal, fowl, turkey, quail, oysters, etc." It should be added here that when one of the sanguine temperament is corpulent, it is because he is actually *fat*, while one of the lymphatic temperament with the soft flabby tissues peculiar thereto, is *lymphatic*. This will be better understood by a study of the temperaments in Chapter II of Part IV.

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I once had a lymphatic patient who, at the outset of treatment, weighed 305 pounds. His menu, under my advice, consisted of about one-half pound of round steak, and two or three large tablespoonfuls of oatmeal mush for breakfast. At noon, about the same food that others used, except avoiding pastries and sweet things. At tea, oatmeal mush, stewed prunes, or other stewed or canned fruits. In about three

FIG. 29.



SOMEWHAT WEIGHTY.

Too fat for a seat in a trolley!

months, under this régime, which was not the best in the light of modern science, he reduced his weight one hundred pounds. His dietetic habits were supplemented with long walks every day, of four or five miles in going to and from his office. Then, occasionally, he bundled up warmly (it was winter) and walked until perspiration streamed from his face. Much exercise, with cold bathing and tight bandaging of the abdomen will materially assist in reducing flesh or excess of lymph. In the selection of food, bulk rather than nutritive material is to be chosen. Also the avoidance of liquids at meals.

It is natural for some people to be fat, and for others to be lymphatic. Starvation seems to be the best way to lessen fat in the former, and the lymph fat, if I may be allowed the term, in the other, provided a person has sufficient stamina to enable him to hold out under it. It would hardly answer for the feeble or the aged. Even when food is taken, in the restricted way suggested, it is practically partial starvation. It might be likened to dwarfing or stunting a

shrub or a tree by withholding nourishing fertilizers. There are those who have not the physical stamina to carry them through the starvation treatment, and such persons should watch symptoms closely and not persist in it after they are greatly falling away in strength and vivacity as well as in flesh. The readers of the daily press are now and then informed of cases which have proved fatal by blindly and perseveringly following rules for reducing corpulence. There is no need of that. Be reasonable and quit any régime which is reducing the vitality

as well as superabundant fat. In some instances it is well to supplement the required diet and exercise with medical treatment. There is such a condition as too active assimilation, and this is a diseased or morbid activity of the villi or absorbent vessels along the alimentary canal, of which there are about four millions, all on the alert to take in what is called for by the various hungry cells composing the body. In diseased subjects they may be excessively active and absorb more than the cells call for or need. Such cases should have the advice of a competent physician, who must determine the cause of such derangement and prescribe the appropriate remedy. Diet and exercise alone will not suffice.

## A BRIEF WORD TO THE LEAN.

What has been said regarding the best food for the fat readily suggests to any intelligent person what should be selected when there is a desire to cover the bones and muscles with a good coating of flesh. One in this dilemma needs to reverse the foregoing advice. Eat fats and starchy and saccharine foods. Partake only moderately of fruits or foods containing much that is acid, and aim for that which is nutritious rather than bulky, though something of bulk is always required to assist the digestive process. In some cases of extreme leanness, however, it will be found that assimilation is inactive just as in others it is too active. That is to say, the little absorbent vessels in the lining of the stomach and intestines are not active enough. The appetite may be good, even voracious; the digestion may give no evidence of derangement; but the nutritive matters fail to be taken up. Here, then, is a job for the doctors. The twenty feet or more of intestines must be put into a healthy condition, so that they will perform their functions. This accomplished, the cadaverous subject can, by the proper selection of foods, cease to be a walking skeleton. To make such choice of foods intelligently, do what a fat person is directed not to do, bearing in mind always that digestion must precede absorption, and that foods of a fattening kind will not be so to those who cannot digest them—often true of nuts and sweets.

FIG. 30.



THIN ! TOO THIN !  
Could escape through a good-sized key-hole !

## BEWARE OF FADS.

While guarding ourselves with reasonable caution against things which are manifestly injurious, we must quite as carefully avoid fads which unnecessarily limit our freedom in the choice of foods. The following, which appeared in *The Humanitarian*, published in London, and quite extensively copied in this country, should not be regarded as authentic or conclusive unless some further evidence is given of its correctness. My criticism will appear in the proper place. Says *The Humanitarian* :

"Anatomical experiment and investigation show that the chief characteristics of old age are the deposits of earthy matter of a gelatinous, fibrinous character in the human system. Carbonate and phosphate of lime, mixed with other salts of a calcareous nature, have been found to furnish the greater part of these earthy deposits. As observation shows, man begins in a gelatinous condition ; he ends in an osseous or bony one—soft in infancy, hard in old age. By gradual change in the long space of years the ossification comes on ; but, after middle life is passed, a more marked development of the ossific character takes place. Of course, these earthy deposits, which affect all the physical organs, naturally interfere with their functions. Partial ossification of the heart produces the imperfect circulation of the blood which affects the aged. When the arteries are clogged with calcareous matter there is interference with circulation, upon which nutrition depends. Without nutrition there is no repair of the body.

"None of these things interfere with nutrition and circulation in earlier years. The reparation of the physical system, as everyone ought to know, depends on this fine balance. In fact, the whole change is merely a slow, steady accumulation of calcareous deposits in the system. \* \* \* When these become excessive and resist expulsion, they cause the stiffness and dryness of old age. Entire blockage of the functions of the body is then a mere matter of time ; the refuse matter deposited by the blood in its constant passage through the system stops the delicate and exquisite machinery which we call life. This is death. It has been proved by analysis that human blood contains compounds of lime, magnesia, and iron. In the blood itself are thus contained the earth salts. In early life they are thrown off. Age has not the power to do it.

"Hence, as blood is produced by assimilation of the food we eat, to this food we must look for the earthy accumulations which in time block up the system and bring on old age. \* \* \* Almost everything we eat contains more or less of these elements for destroying life, by means of calcareous salts deposited by the all-nourishing blood. Careful selection, however, can enable us to avoid the worst of them.

"Earth salts abound in the cereals, and bread itself, though seemingly the most innocent of edibles, greatly assists in the disposition of calcareous matter in our bodies. Nitrogenous food abounds in this element. Hence a diet made up of fruit principally is best for people advancing in years," continues *The Humanitarian*, "for the reason that, being deficient in nitrogen, the ossific deposits so much to be dreaded are more likely to be suspended. Moderate eaters have in all cases a much better chance for long life than those addicted to excesses of the table. Fruits, fish, poultry, young mutton, and veal contain less of the earthy salts than other articles of food, and are therefore best for people entering the vale of years. Beef and old mutton usually are overcharged with salts, and should be avoided; a diet containing a minimum amount of earthy particles is most suitable to retard old age, by preserving the system from functional blockages. \* \* \* The daily use of distilled water is, after middle life, one of the most important means of preventing secretions and the derangement of health. As to diluted phosphoric acid, it is one of the most powerful influences known to science for shielding the human system from the inconveniences of old age. Daily use of it mixed with distilled water helps to retard the approach of senility. By its affinity for oxygen the fibrinous and gelatinous deposits previously alluded to are checked, and their expulsion from the system hastened.

"To sum up," says this writer in conclusion, "avoid all foods rich in the earth salts, use much fruit, especially juicy, uncooked apples, and take *daily* two or three tumblerfuls of distilled water with about ten or fifteen drops of diluted phosphoric acid in each glassful. Thus will our days be prolonged, old age delayed, and health insured."

The foregoing is not wholly faddish. It contains some valuable hints which can be utilized by a person of ordinary intelligence, but it is questionable whether a person could greatly lengthen his life by following a theoretical rule and use just so much of each of the elements contained in foods. One would indeed need to be a practical chemist to derive much benefit from what is said in the quotation regarding nitrogenous foods. Bread is universally regarded as the staff of life. Almost every civilized individual uses it. Sir William Crookes said, in an address before the British Association for the Advancement of Science: "We are born wheat eaters. Other races, vastly superior to us in numbers, and differing widely in material and intellectual progress, are eaters of Indian corn, rice, millet, and other grains, but none of these grains has the food value, the concentrated self-sustaining power of wheat, and it is on this account that the accumulated experience of civilized mankind has set wheat apart as a fit and proper food for the development of muscle and brain." He estimates the bread-eating population of the world at the present time at 516,500,000!



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Are all these people making a fatal mistake in using bread? I think not, and I will state the reason why. The blood sustains the same relation to the animal world that the soil does to the plant. The blood may be said to be the soil of the man, from which he receives his

FIG. 81.



A PUBLIC DINING-ROOM.

"He may live without books—What is knowledge but grieving?  
He may live without hope—What is hope but deceiving?  
He may live without love—What is passion but pining?  
But where is the man who could live without dining!"

—OWEN MEREDITH.

nourishment. Now, the plant needs no one to tell it what to take into its roots for the proper nutrition of its trunk, branches, and foliage. Its little root-fibres reach out into the soil, and instinctively select just so much and no more of what is needed for its health and growth. So the bone, nerve, and muscle cells of the animal, be it dog, horse, or man, take up from the blood just what is needed to support its respective part. It is hardly probable that they, any more than the root-fibres of the plants, take up more than is needed if in health. A person may eat too much of that which is too rich, and thereby injure his digestion; he may take food which contains injurious microbes or poison, and thus render his blood impure. Disease or death may result from such indigestion or impurity; but it is not to be reasonably supposed that



the little cells composing the various tissues of the body, as a rule, take up for their use any nutritive particle they do not require. It may be that in a person of poor health or great age, elimination may be sluggish, and the old earthy constituents of the body may not be quickly or sufficiently enough removed, but manifestly the remedy for such a condition is the use of such foods or remedies as will awaken more active elimination. This, rather than scientific selection or starvation, is the proper method of preventing an undue storage of earthy matter. The aged, while avoiding all excesses, should answer and supply every reasonable demand of the appetite. If a person be constipated, or if he have any derangement of the urinary organs, which interferes with the proper drainage of the system; if the natural processes for the removal of old material are for any reason acting sluggishly, such a person, whether he be a youth of fifteen or an adult of eighty, should see to it that all such obstructions are quickly removed by laxative food or medicine. It is not because of too much earthy matter in bread that old people become earthy and stiff, but rather because in the order of nature, they *must*, whatever their diet. It is simply the natural trend of age. A person of good habits in health can safely depend upon his appetite for the kind of food he needs. The bone, the muscle, the nerve, and every other part of the animal organization makes known its wants by what we familiarly call the appetite. We but answer their needs when we carefully masticate the foods containing the properties they ask for, and deposit those supplies in the stomach. We must use some discretion in regard to the amount to be taken, or we may derange the digestive machinery. When the various parts obtain what they call for, we become satiated, or in other words, satisfied. Appetite is appeased. A person may have a morbid appetite, but such a person is not in a normal condition. He is diseased. I am talking about one in ordinary health. The advice given by *The Humanitarian* to the aged, to use considerable fruit, is rational and valuable, if fruits are found to agree. Some people cannot make a free use of fruits. Those who can may safely follow that advice.

In the discussion of foods, a writer is quoted as saying: "Since wheaten bread contains some 35 to 40 per cent. of starch, and it is acknowledged that starchy food is of an unhealthy nature, the use of such bread must also, therefore, be unhealthful; the reason given for this unhealthfulness being that starchy food is not digestible in the stomach, but in the intestines or second stomach of the body, and that therein lies the difficulty of digestion of wheaten bread." To this comes the reply, says another writer, "that the stomach is only a fractional part of the digestive tract, and that the second stomach, or intestinal tract, is called on to aid the digestion of nearly all varieties of food." Observing the foregoing discussion of starchy foods going the rounds of

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the daily press, Dr. E. B. Foote, Jr., who has given much attention to dietetics, and is the author of a practical monograph on foods, naturally exclaimed: "What are the threefold starch digestive processes and fluids for, except to properly dispose of starchy foods? What is intestinal digestion for? To be idle, like a tramp? The stomach itself can more easily be dispensed with than intestinal digestion." It may also be insisted that starchy food is not "acknowledged" to be unhealthy. No, that is certainly a fad. There are enough hoodoos and quite enough real pit-holes to arouse the fears of groping humanity, without putting up unnecessary scarecrows. I shall speak of some of the real dangers we encounter a little farther on.

OLEOMARGARINE has been condemned by those who are materially interested in milk products, and its manufacture and sale have been forbidden by the statutes of some of the States of the Union. That it is a fraud to put this article on the market under the pretence of its being pure creamery butter, no one will question. But when it is made of suet or oleo-oil, it is not unsavory; it is not prejudicial to health; at least, any more so than beef containing fat; and if it could be offered in our markets for just what it is, it would be a boon to those who cannot afford the luxury of creamery butter. If the latter can be made to have a delicate fresh flavor by the addition of the cultured bacteria referred to on page 83, as claimed, there is no reason why the same means should not be employed by the manufacturers of oleomargarine for imparting the same flavor to their product. At the annual exhibition of the American Institute, in the City of New York, some years ago, there were samples of oleomargarine placed side by side with the best of creamery butter, with a challenge to the visitors to distinguish, if possible, which was oleomargarine and which the genuine butter. As often as otherwise, the former was decided to be the simon-pure article! When the best of suet or oleo-oil, which is made from the selected fat of the steer, is used in its manufacture, and the cleanliness which has been ascribed to its makers maintained, it is undoubtedly a wholesome article of food. Chemistry says that it is, and that it contains all the properties of the best dairy butter. A lady contributor to the *Scientific Arena*, Mrs. M. S. Organ, M.D., tells us, however, that "Chemistry developed to its highest analytical and synthetic power, is utterly incapable of deciding *a priori* whether organic or inorganic elements are best fitted to nourish the animal economy." She further says: "Vitality can and does transmute material of whatever grade into living fluid, so similar in its constituent elements that the most careful chemical analysis cannot detect any appreciable difference. Yet physiological science has fully demonstrated that in vitalizing quality there is vast dissimilarity. Blood made from pure wholesome food will resist decomposition for a much longer period than that

made from an inferior quality." She contends that the dietetic nature of the substance depends, not upon the matter of which it is composed, but upon the constitutional laws of its arrangement of particles; that pure oleomargarine contains the same primordial elements as butter, but in the face of the primary law of nature this chemical fact cannot establish its claims as a pure and wholesome article of food; that the suet or fat of which oleomargarine is made cannot under any circumstances be a healthful or nourishing product, because its formation depends upon an abnormal or diseased condition of the animal. She believes "the process of fattening—of developing suet—necessitates an unbalanced relation between the assimilating and depurating organs, in consequence of which waste matter in the form of fat is retained; that an animal allowed the kind and amount of exercise which is essential for its healthful development, the depurating organs will be excited to that normal activity which will eliminate the excess of fat," and she thinks these well demonstrated facts "settle the question that oleomargarine can never be made a healthful dietetic product." The trouble with Mrs. Dr. Organ's facts are that they prove too much. If they are facts, then all the fat meats prepared for our table, of every description, are unwholesome. It is customary whether preparing a chicken or a bullock for the table to sufficiently confine the animal to prevent it from running off its fat, and then, too, it is usual to so feed him as to produce as much fat as possible. This process is believed to render the meat tender and delicious. All this may be a mistake, and if it is, it furnishes a first-rate argument for the use of the vegetarian, but it hardly furnishes a good one for discarding oleomargarine, while we are freely eating of other animal fats. If oleomargarine is not healthful when properly prepared, then all of our meats so common to our table are also objectionable. Perhaps Mrs. Dr. Organ is a vegetarian; possibly her very intention in attacking oleomargarine in this way was to lead the logical reader to see that not only oleomargarine, but all animal food, at least that derived from the flesh of animals, must be discarded. Whatever her design, it will probably fall short of its purpose, for the reason that if she wishes to dissuade the human family from the use of meats because those meats are injurious, her alleged facts need more support than she has given them. If her intention was to discourage the use of oleomargarine while her readers are allowed to eat dead animal fats in all forms except in that of oleomargarine, the reader who uses his thinking machine will be apt to question either her sincerity or her argument.

What is herein said in vindication of oleomargarine applies only to the article made from the fat of the beef. It can be, and sometimes is, adulterated with lard and other oleaginous products—and so is butter itself. For this reason, vigilant inspection by legally appointed officials

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of the State is absolutely necessary to prevent fraud and protect the health of the consumers. Such products should be honestly labelled for just what they are, and should bear only the price to which they are justly entitled. But oleomargarine should not be condemned just because it is oleomargarine.

### GOOD DIGESTION THE MAIN THING.

Diet exercises such an influence on all, physically and morally, that too much care cannot be observed as to the quantity and quality of the food we eat, and the regularity with which it is taken. A newspaper writer, I don't know who, remarks, that "much of our conduct depends upon the character of the food we eat. Bonaparte used to attribute the loss of one of his battles to a poor dinner, which at the time disturbed his digestion. How many of our misjudgments, how many of our deliberate errors, how many of our unkindnesses, our cruelties, our acts of thoughtlessness and recklessness, may be actually owing to a cause of the same character? We eat something that deranges the condition of the stomach. Through the stomach nerve that derangement immediately affects the brain. Moroseness succeeds amiability, and under its influence we do that which would shock our sensibility at any other moment. The disturbance of the digestion may involve the liver. In this affliction the brain profoundly sympathizes. The temper is soured, the understanding is narrowed, prejudices are strengthened, generous impulses are subdued, selfishness, originated by physical disturbances which perpetually attract the mind's attention, becomes a chronic mental disorder. The feeling of charity dies out; we live for ourselves alone; we have no care for others, and all this change of nature is the consequence of an injudicious diet."

### A FEW DANGER-SIGNALS.

Let me sound a few notes of warning which, unfortunately, are not fads. The careless use of fruits or vegetables having seeds of a certain size and conformation is to be deprecated. We hear frequently of both children and adults dying of appendicitis—more often children. Our sires and grandsires knew little of this disease; even the doctors not much. It has, nevertheless, been as prevalent and as fatal in the past as the present. It used to be considered almost sacrilegious to use the knife upon the bodies of deceased friends. Autopsies were allowed only when the deceased was friendless. Consequently, then, as now, there was much mortality in what was called appendicitis, or inflammation of the bowels. The real exciting cause was seldom considered or known. It was merely guessed at. Under a more rational usage the physician is permitted to make an autopsy to ascertain the cause of

death in the families of intelligent people. These examinations have revealed the fact that peritonitis is often caused by the lodgement of a seed or some other small object in what is called the vermiform appendix. And what is the vermiform appendix? It is a little pocket in the intestines which is much in the form of a worm, hence its name. Its location can be seen in the accompanying illustration:

This illustration represents a small portion of what is called the "blind end" of the large intestine—the cæcum. It is to this portion that the small intestine is joined (though not pictured here), and into it the contents of the small intestine are discharged through a valve-like opening as they are moved on through the body. The upper portion of this picture shows this part of the large intestine "tied off" or cut away from the rest. At the lower part of the picture is seen the vermiform, or worm-like appendage, which is not known to serve any useful purpose and which is usually empty, presenting an opening into which nothing larger than a straw can readily be introduced.

FIG. 32.



A LITTLE DEATH-TRAP.

Exactly what this appendage is for, physiologists have not yet fully determined. It has doubtless served some useful purpose in the other forms of animal life. In the human race it is supposed to be rudimentary. An apple, orange, or a grape seed, lodging in this little pocket, may awaken an inflammation which is liable to form an abscess, and the discharge of the contents of this abscess into the cavity of the abdomen will induce inflammation of the peritoneum—a membrane that lines the abdominal cavity—and this inflammation, or the absorption of the contents of the abscess into the blood, may cause death. A person losing his life in this way is said to have died of appendicitis. So it will be seen that it is no false alarm when the reader is cautioned to avoid swallowing the seeds of oranges, lemons, or apples, or cherry stones, or other hard, small substances about the size of these. Anything of the size and shape of an orange seed is most liable to firmly lodge in the vermiform appendix, because the latter is just about as large, usually, as a goose quill. It is not entirely safe to swallow grape and other smaller seeds, but those which are just about the size of the mischievous little pocket are manifestly the most dangerous, for the reason that when they once enter they get wedged in, and are not easily dislodged.

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by any movement of the intestines. It may as well be added here that sometimes secretions of the intestines fall into this pocket and harden so as to produce equally fatal results. Small gall-stones may lodge in it and give trouble. But these causes can hardly occur in persons who can be said to be in good health. They are only liable to affect those having serious catarrhal difficulties, habitual indigestion, or bilious affections. The *seeds* referred to are clearly avoidable causes, and that is why they are mentioned in this place.

### WINGED SCAVENGERS.

Keep flies off your food. It is to be admitted that this cannot always be effectually done. During the warm weather the fly is omnipresent. He is ready to dip his unclean proboscis into everything. He creeps over your pies and cakes, and inspects every fresh loaf of bread; he takes a plunge into your soup, and a swim in your milk; he probes your butter to see if it is the pure stuff or only oleomargarine; all this and more he performs after a clumsy fashion, unless you faithfully employ the wire-gauze covers to be found at the house-furnishing stores for table use. He samples your sugar, molasses, and honey, and these should be kept closely covered. So far as possible, keep these winged scavengers from everything you eat. Prevent them from being generated on your premises. Most people do not know where flies come from. As soon as warm weather appears, you have the full-grown fly. You do not see a baby fly which gradually grows to adult proportions, but he comes to your kitchen and table full-fledged and ready for mischief. There is some fermenting or decomposing material near your door which breeds maggots. From these full-grown maggots the full-fledged fly emerges after passing through the pupal state. Then every female fly lays eighty eggs at a time in filthy or decomposing substances, from which the maggots in due time emerge, ready to run their career and send out the same number of new full-grown flies. It is computed that "one fly will in the space of a year find itself at the head of one million one hundred and ninety-two thousand descendants!" Therefore, look out that antiseptics are used in the sinks of your out-houses, while removing as quickly as observed all outlying filth. By taking these precautions you will not be as greatly afflicted with the fly pest, for all flies come from the larvæ we commonly call maggots. The varieties smaller than the house-fly, some of them mere gnats in size, are of an entirely different species—not young flies—and they come from a maggot as well as the larger kind. Such flies will often swarm about a plate of decaying fruit from which they have been generated. Your less careful neighbors will, of course, have these insects, and they will trouble you more than their hens and chickens do, unless you protect yourselves by screens in your windows, screen doors, and wire



**covers on your tables. By all means keep flies from contaminating your food by every device you can conveniently employ.**

During America's war with Spain you all know how our soldiers perished more by malarial, typhoid, and other fevers than by the Mauser bullet. Flies were one of the most prolific causes of that fearful mortality. The men, by privations, hardships, various indiscretions, and homesickness, became physically devitalized. Their systems were

made an easy prey to depredative bacteria. The irrepressible and inevitable house-fly was the carrier and distributor of the mischievous microbes. In some cases there were open sinks within twenty feet of the kitchens of the camps, and while the sinks were reeking with the fermenting excrementitious matters from malarial and typhoid fever patients, and with the larvæ of flies, these insects emanating in swarms from this impure source, ravenously covered the food of the soldiers on duty. It is not strange, therefore, that there were daily accessions to the hospitals of new patients, some with malaria, others with typhoid, and many with yellow fever. How

could it have been otherwise in view of what has already been presented on page 26 under the head of "Germ Diseases?" In his testimony before the War Investigating Committee, Surgeon R. Emmett Griffin testified that in his opinion, "the regiments at Chickamauga Park were all infected with typhoid which had been carried by the flies from open sinks to the food in the kitchen." Some of the generals of the army added testimony corroborative of that which Dr. Griffin had given.

Malaria of that sort, so fatal in tropical climes, was the scourge of the camps in Cuba. When one reflects upon the way the bacteria of malaria are produced and reproduced by the millions (see page 32), and further considers the microscopic character of those minute malarial germs, what more natural than their adhesion to the legs and wings of the flies swarming from the open sinks, and their deposit upon the food over which the next moment the insects would be crawling. Just as birds and insects carry the fructified pollen from the male flower to the pistils of the female, the common house-fly may carry bacteria from a

FIG. 33.



THE HOUSE-FLY, LARVA AND PUPA.

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reeking mass of filth to the food of the kitchen, or to the delicacies of the table. It is not strange, therefore, that malaria and yellow fever spread with great rapidity in the army in Cuba, requiring its immediate removal to the more salubrious atmosphere of the States, nor that typhoid fever threatened to wipe out the entire army tented in Chickamauga Camp. Sternberg Camp received 120 new cases in a single day; 450 in six weeks. In the camp there were 5,000 cases! Prior to the arrival of the troops, it was said that there had not been a case of typhoid fever in that locality for nine years! General Boynton, in his testimony before the War Committee, said: "The open sinks attracted

FIG. 34.



THE HOUSE-FLY'S FOOT, WHICH PLASTERS MICROBES ON OUR FACES. OTHER COMMON INSECTS ARE ENGAGED IN POISONING US.

swarms of flies, only to be compared to the Egyptian plague described in the Old Testament. Those flies swarmed back and forth from the sinks used for typhoid fever patients, to the mess tents of the officers and men." If General Boynton had said that the contents of the sinks reeked with filth-producing, squirming millions of maggots, which, in turn, liberated from their skins swarms of flies, he would have hit the nail on the head, and have rendered his testimony still more valuable.

The lesson to be learned from all this is the importance of destroying flies while in the larvæ rather than by the cruel method of fly paper. The former method is far more effective. If the contents of refuse barrels are frequently disposed of and kept covered closely while being filled; if the sinks of outhouses are frequently treated to antiseptics like lime or carbolic acid, or sulphate of copper, or sulphuric acid; if all garbage from whatever source is quickly buried or burned; if decaying fruits and vegetables are not permitted to accumulate in kitchen or cellar, or in the neighborhood of the home, the fly pest will be greatly lessened, and the danger of contracting disease from mischievous bacteria reduced to a minimum. A formula for cesspools and for faecal matters in vaults, given by Dr. Vincent in a report to the Academy of Sciences at Paris may, with advantage, be reproduced here. "His experiments showed that the best of all disinfecting agents for the destruction of faecal matters in vaults and cesspools is sulphate of copper employed in connection with one per cent. of sulphuric acid. The quantity of sulphate of copper required was one pound for every three cubic feet of faecal matter mixed with urine. It was found necessary that the disinfectant should remain in contact with the infectious material for at least twelve hours."

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I well remember how in my boyhood I watched the grazing horses and cows with surprise, while at the same time noticing the activity of the small insects teeming in the grass. It seemed strange to my immature mind that they could relish their food when it was filled with lively arthropoda. (I didn't know them by that name then!) Little did I dream that I, and all other human beings, were daily consuming microscopic creatures which, although invisible to the naked eye, were no less living and active organisms. That fact being known, and the further fact that some of these bacteria, either in themselves or because of their impure origin, may communicate malignant disease to one whose system may be somewhat reduced by trouble, overwork, or hardship, it behooves us to employ all known means to prevent them from being brought into our homes; or if they cannot be kept out of our homes, then, as already suggested, use every device to keep them from our food. If butter is made sweeter, or cheese improved in flavor by the kindlier sort of bacteria, we may be pardoned for closing our doors and windows so far as practicable to the pestiferous variety borne on the backs, legs, or wings of the house-fly.

EDIBLE BIVALVES.—Epicures who greatly relish oysters on the half-shell should take some pains to ascertain where they come from. The place of their nativity, or the spot where they may have been bedded, is not a matter of small importance, especially if a person is not sure of having a digestive apparatus strong enough to destroy possible germs of typhoid or something equally threatening to health. If they come from oyster-beds in the neighborhood of large cities, look out for them. In such case it is safer to have them well cooked and well done. Dr. Cameron, Health Officer for Dublin many years ago, in a paper on "Typhoid in Oysters," said that large numbers of persons have suffered from inflammation of the small intestines as the result of eating oysters taken from places to which sewage had access. An outbreak of typhoid fever among the students of a well-known university in Connecticut was said to have been caused by eating "raw oysters which had been kept in a bed in the Connecticut river where it received contamination from a sewer." It is safer, I repeat, in using oysters, clams, or mussels, to have them thoroughly cooked. Other examples of mischief arising from carelessness in this matter might be given—enough indeed to fill many pages in this book.

GREASE is supplied quite too abundantly for the table to preserve the purity of the blood. Weak stomachs call loudly for reform in this particular, while strong ones faithfully perform their work of sending the offending substance to the vascular system, to feed or create humors. Fat is not digested in the stomach, but simply melted and absorbed into the blood. A certain amount is necessary to nourish the brain, and

hundred, and but few of them, our best writers tell us, are safe as food. It seems that the most deadly are slowest to exhibit their fatal effects. The "minor poisons" are said "to begin their work within four or five hours after the fungus has been eaten, while ten or twelve hours may supervene before the worst symptoms of the most deadly kind present themselves, and the case is almost always hopeless." Those raised from the spawn by a gardener or florist may be safely trusted; but such as are gathered in fields, as before remarked, should be first submitted to an expert mycologist before they are brought to the table. This is absolutely the only safe plan for those who will eat mushrooms.

**CANNED FOODS.**—It is not an easy matter to advise the reader how to avoid that which is deleterious, if not actually poisonous, that comes to us in cans. Accounts are often appearing in the daily press of cases of severe illness or death resulting from the eating of canned fish or meat. It would require the knowledge of a good chemist in some cases to detect the offending property. To guard against possible fermentation which renders such foods worthless, canning establishments have resorted to the use of antiseptics. "This custom," remarks an editorial writer in the *New York Tribune*, "has been growing for years, until now few articles of preserved food are entirely free from suspicion. Fruits and vegetables in tin or glass, fruit jellies, juices and extracts, meats and fish, all are treated with antiseptic chemicals to keep them from decay. Various agents are used for the purpose, all of them objectionable. Once there was a great run on salicylic acid, especially that synthetically prepared. Then formaldehyde and bisulphite of lime were taken up. At present boracic acid is probably the favorite, and is used in enormous quantities, partly because it is so weak an antiseptic that much of it is needed to fulfil the purpose, and partly because it is deemed to be so harmless that it may be taken with entire impunity.

"Harmlessness has, in fact, been predicated of all such drugs. But the truth is that they are all harmful. An antiseptic must, in the very nature of the case, be harmful to the healthy organism. Its peculiar property is its power to destroy low forms of life. But many, indeed most, of the low forms of life are beneficent, and the destruction of them is an injury to the higher. The human body swarms with beneficent bacteria, which serve both to destroy noxious bacteria and to promote the various constitutional functions of the body. If these be destroyed by the reckless use of antiseptics, positive and perhaps serious harm is done. Moreover, the protoplasm of the bacteria is identical with that of the human body itself, and if the antiseptic drug be destructive to the one, it may at least be injurious to the other. That is not to argue against the use of antiseptics as medicines. In disease, when the body is filled with noxious bacteria, such drugs may be most

business would be ruined by any mishap resulting from carelessness in this matter ; but housewives who prepare it for their tables, and those who think they know how to make ice-cream when they are mere novices in the art, should know of the poisonous alkaloids which may be generated in milk or cream when not carefully handled, and it is for this reason, mainly, that this paragraph appears in this place.

**MUSHROOMS.**—Many years ago, while I was ruralizing and writing my "Science in Story" in a small country village in Connecticut, nearly the entire family of an intelligent gentleman in the neighborhood was wiped out of existence in a few hours by eating what were supposed to be mushrooms. The wife

and mother, a woman of some literary ability who contributed articles to the press, hence not an illiterate person, together with an interesting family of children, all ate of the fungus and died. I believe that the husband and father recovered from the effects of the poison. Now, while I am writing these "Danger Signals," the New York papers give an account of a family in New Jersey that has been nearly extinguished by the same cause. The father, mother, and one son have been buried, and four others who partook of the deadly vegetable are in a condition bordering on death. How many such sad recitals I have seen in the daily papers

in the interval between the fatal event in Connecticut and the one now reported in New Jersey, I will not undertake to estimate ; but quite enough to lead me to say something in this place about the *uncertain mushroom* ! I would urgently advise my readers to never partake of this fungus unless it has been passed upon by an expert mycologist, who may be supposed to have a discriminating eye in such matters. The Encyclopædia will tell you that "there is no general rule for distinguishing the wholesome from the harmful. The colors produced by contact with a silver spoon or by the action of salt, have been proposed, but are fallacious. The only guide to be relied upon is *an eye educated to observe the peculiarities of structure, color,*" etc. So it will be seen that any effort in this article to describe the harmless edible would be of no use whatever. If you are not an expert, your judgment cannot be trusted. Submit what you gather from the pastures or fields to somebody who is, or straightway thrust them into the refuse barrel if you value your life. The varieties of the fungi are numerous, over one

FIG. 35.



COMMON FIELD MUSHROOM--EDIBLE.

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PROTRACTED INTERVALS between meals should always be avoided, if possible. In large cities, it is the custom of many business men to go from 8 or 9 A.M. to 4 or 5 P.M., without eating. Three-fourths of the merchants of New York do not dine till 6 or 7 P.M. and a large number of these take no luncheon. A writer, quoting from Dr. Combe, and *Household Science*, advances some sensible views, which may be appropriately introduced here. He says: "The grand rule in fixing the number and periods of our meals is to proportion them to the real wants of the system as modified by age, sex, health, and manner of life, as indicated by the true returns of appetite. As the blood is usually most impoverished after the eight or ten hours' fast of the night, breakfast should be early. The stomach is usually vacated of its nutritive contents in about four hours after eating, but it may be an hour or two later before the blood begins to call upon it for a renewed supply. Persons engaged in active labor, in which bodily expenditure is rapid, of course require to eat more often than the indolent and sedentary, and children need nourishment oftener than adults. But too long abstinence, especially if the digestive power be not strong, sharpens the appetite, so that there arises danger of excessive eating. Some avoid luncheon, for fear of spoiling the dinner, whereas the thing they most need is to have it spoiled. When the intervals between the meals are so long as to produce pressing hunger, something should be taken between them to stay the appetite, and prevent over-eating. Late and hearty suppers are to be reprobated; active digestion and sleep mutually disturb each other, as at night the exhalation of carbonic gas is lowest, and tissue-changes most retarded. The overloaded blood is not relieved, and invades the repose of the brain, producing heavy, disordered dreams, and nightmare, followed by headache and ill-humor in the morning. Still, there is the opposite extreme, of sitting up late, and going to bed wearied, hungry, and with an indefinable sense of sinking, followed by restless, unrefreshing sleep. A little light nourishment in such cases, a couple of hours before retiring, may prevent these unpleasant effects."

THERE is no doubt great difference in the actual needs of people in the matter of food. Many have tested and become ardent advocates of the "two-meals-a-day" plan, while some find even only one meal per day sufficient for them, and seemingly best to maintain health. Experiences of such persons also differ as to the time of day when the one or two meals should be taken. Dr. Edward Hooker Dewey, of Meadville, Pa., after seventeen years' experience in going without breakfast, wrote a book of over three hundred pages to advocate his plan for general adoption, but especially for those who have become dyspeptic, obese, plethoric, or addicted to excessive use of alcoholics. He has many converts who are firm in the faith of "the morning fast." His theory is

that the digestive apparatus is not fully awake and ready for business until the person has stirred about and got the blood circulating well, and the glands begin to secrete digestive fluids. Others advise dispensing with the noon-day meal on the ground that when the nerve-forces are drawn to the brain in active business affairs, digestion is likely to fail for lack of nerve-stimulus. Others prefer going without an evening meal. The fact is, the stomach has been a much abused organ, and there are many ways of easing up on it, no one of which is the perfect one for everybody, but each has its fitness for somebody. The over-fed brain-worker who dines and wines to repletion in the evening, sleeps late and gets up with a "thick tasting" mouth and no appetite, may well breakfast on a cool glass of water and an orange, postponing his first real meal till lunch-time; while the farmer who rises at four or five in the morning and completes half a day's work before breakfast will find his digestive functions ready for it. Yet the farmer may find it wise to eat lightly at noon if he have an afternoon's work to do in the heat of the sun. Food should not be taken after severe exercise, nor very severe exercise follow a hearty meal. To sum up all under this head, people must be more careful what they eat, at what times they eat, how much they eat, if they would preserve the healthy condition of the vascular and nervous systems. There can be no precise rule laid down for the governance of all. A little careful observation, however, would teach everyone of mature age what is best adapted to his particular organization. If men would watch with half as much anxiety the influences of different articles of food on their systems, as they do the effects of growing crops and financial failures on the money market, longevity would oftener be obtained than large fortunes.

### The Liquids we Drink.

A correct understanding of the effects of various liquids commonly used as beverages, will enable the reader to understand how much they have to do in the production of nervous derangements and blood impurities. It is estimated that every person drinks about 1,500 pounds of liquids per annum. All these are filtered through the human system, leaving whatever nutritious or poisonous properties they possess. The Chinese tea forms the principal beverage of all the Northern States and British Provinces of America. In Central America the heterogeneous population resort to chocolate, while in South America the tea of Paraguay is freely indulged in. In the Southern States and West India Islands coffee seems to be the greater favorite, particularly with adopted citizens, and perhaps this remark is equally true of this class in the Northern States. In France, Germany, Sweden, and Turkey coffee is principally used; in England, Russia, and Holland tea; in Spain and Italy chocolate; in Ireland the husks of cocoa. The

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Chinese tea has found its way to the Himalayas and the plains of Siberia, and is probably drank by more people than any other beverage. Coffee-leaf tea is sipped in Sumatra, while the Ethiopians of Central Africa quaff the Abyssinian chaat. In portions of Africa, the natives make a beverage of the juice of the plantain, called pombe. The plantain is said to be "the food, and its juice the drink of the people." Pombe is intoxicating, and a traveller relates that "no man of any standing thinks himself to have got fairly through the day, until he has sat upon pombe, which simply means become drunk." The Mexicans make several liquors from a plant that grows very extensively there, called the maguey, the most common of which liquor is called pulque.

It is as common in that country and as much prized, as beer is in Germany. The Indians along the borders of the Rio Grande slice and dry what they call pieoke and what the whites denominate "whiskey root," which they chew until its intoxicating effects are experienced. In all civilized countries, malt and vinous liquors, rum, whiskey, brandy, gin, and other distilled liquors are drunk in enormous quantities. It may be truly said, that whiskey leads the march of civilization. Wherever the missionary or the agent of commerce penetrates, civilization creeps along with whiskey in the advance.

FIG. 36.



THE LIQUIDS WE DRINK.

Authors and orators are often excessive toppers. The author of "The Raven" died of the effects of a drunken frolic. One of the most eloquent men that ever graced the Senate of the United States, and to whom on one occasion when he was speaking, a celebrated English authoress threw her glove, as a demonstration of her appreciation of his eloquence, dropped from the eminence he had gained, before the world fairly knew him, overpowered with excessive indulgence in strong drink. Gluck, the musical composer, drew his inspiration from champagne; Southey drank hot rum at bed-time; Coleridge absorbed rum excessively; Byron's poems were the products of poet's brains macerated in gin. Rabelais said, "Eating and drinking are my two sources of inspiration. See this bottle? It is my true and only Helicon, my cabalistic fountain, my sole enthusiasm. Drinking, I deliberate, and deliberating, I drink." "Ennius, Æschylus, and Cato," remarks a writer, "all got their inspiration while drinking; Mezzera had always a large bottle of wine beside him among his books; he drank of it at each page he wrote." It is not surprising that someone discovered that "genius to madness is close allied," and since that discovery we see many



who seem to think that madness to genius is close allied, so that all they have to do to exhibit great genius is to get drunk. We will not, however, dwell longer on the drinking proclivities of nationalities and individuals, but proceed to look into the qualities and effects of our most common beverages.

## TEA AND COFFEE.

Tea was first brought to the notice of Europeans by the Portuguese in the sixteenth century, although previous to that period warm drinks were extensively made from sage and other herbs. Coffee was first introduced into Southern Europe in the same century, but the Persians received it from Ethiopia as early as the eighth century. Unadulterated tea, as it comes upon the table, contains gum, grape sugar, tannin, and theine; and coffee ready for use possesses fat and volatile oil, sugar (such as may be obtained from grape, honey, and most acid fruits), dextrine, and caffeine.

The enthusiasm which these beverages have awakened respecting their agreeable qualities may be interesting here. An astute Chinaman, with the funny cognomen of Lo Yu, who sipped piping-hot tea over one thousand years ago, said, "It tempers the spirits and harmonizes the mind, dispels lassitude, and relieves fatigue, awakens thought, and prevents drowsiness, lightens or refreshes the body, and clears the perceptive faculties." A European of the sixteenth century spoke of coffee "as a beverage which helpeth digestion and procureth alacrity." Whether Chinaman and European were entirely right or not in their estimate of the good qualities of tea and coffee, the fact presents itself to-day that no beverages are so extensively used; and I think modern writers may say with truth that, if used moderately, and with due reference to temperament and individual idiosyncrasy, none are more harmless. Be sure you get the full meaning of the last sentence.

The fact that tea does not agree with one person, does not prove it dangerous or injurious for another. Some people cannot eat strawberries without an attack of colic; others enjoy strawberries, but a sweet apple will create constipation. The effects of tea and coffee depend entirely on the physical peculiarities of the drinkers, and the same as in the use of food, no definite rule can be laid down. General directions may be given which, if observed, will enable most intelligent persons to judge of what is positively hurtful in their individual cases. Few nervous people can drink tea, while those of a bilious and lymphatic temperament can indulge with impunity. The effects on the former are usually weakness, tremor, hysteria, hypochondria, and paralysis; while on the latter, they are mental and corporeal exhilaration. Tea acts at once on the nervous system, quickening the circulation of the electrical elements, and imparting to the man of sluggish nerve activity

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and vivacity, and its use often allays headache. Both tea and coffee may be the cause of obstinate, nervous headaches, if used in excess, and even a little used constantly may bring this result in some persons, but those not already over-dosed with tea or coffee may find them useful medicines for relief of headache. Some physicians, writing of popular stimulants and narcotics, have not hesitated to say that the tea and coffee habits have done as much harm to the health of people as liquors and tobacco, and though less indictable from the point of view of morals, there can be no doubt that much feminine peevishness, irritability and "tantrums" are due to the stimulating effects of these drinks. One of their worst effects is to appease hunger for real foods, so that the habitual user of tea or coffee may come to lack true nourishment. The normal hunger has been suppressed by the feeling of satisfaction inspired by tea or coffee.

Doctors are accustomed to prescribe coffee as a quick stimulant. Coffee is a palliative in tropical, malarial diseases, hysterical affections, and chronic diarrhoea, and asthmatic persons find relief in its use, provided other peculiarities of their systems do not reject it. Coffee should not be used by fleshy and bilious people. It thickens the blood, and apoplexy is sometimes the result of its excessive use. For the same reason, chocolate and cocoa may be drunk by lean, nervous people, while they are injurious to those of corpulent tendency. Many nervous individuals, however, cannot drink coffee, chocolate, or cocoa, for the same reason they cannot drink any hot beverages, *i.e.*, they stimulate in too great a degree the action of the stomach battery, by which means the system becomes overpowered, not exactly with the quantity, but velocity of the animal electrical currents, and the vital organs rendered too active. Pour hot water into the acid of a galvanic battery, and the generation of electricity is greatly accelerated. As in eating, therefore, effects should be watched and heeded. Tea and coffee, like many other things, are abused. They are universally used to excess, and by many who should not use them at all. They are also often badly adulterated. The producers of both of these staples have among them people who are quite as unscrupulous as are those farmers who sell apples and potatoes, with large ones only at the top of the barrel; or, as those who not knowing which end of the barrel will be opened, put the small ones in the middle and the large ones at either end. John Chinaman is even worse, for he puts poison in tea to improve its appearance. Sir John Davis caught him adding Prussian blue, indigo, and porcelain clay, to give inferior tea a good salable color. Merchants sometimes play a scaly trick on tea drinkers, by purchasing from hotels, cheap boarding-houses, and other public eating places, tea leaves which have been used and dried, then mixing them with genuine teas. This bit of cheaterly enables them to undersell their more honorable compet-



itors. Traders who can do this are fit companions for tobacco manufacturers who have collected from the streets and sidewalks cigar-stumps which they manufacture into smoking tobacco.

## HOW TEA SHOULD BE PREPARED.

Miss Alice Neilsen, the prima donna, in a letter to the *New York Daily Journal*, after returning from a trip to Japan, tells us how tea should be brewed. I will give the information in her own words: "Americans," she says, "appear to have been content with visiting the tea gardens or the O'Chaya, as one would say in Japanese, and with drinking the delightful tea as it is made by the dainty tea girls. But I felt that I ought to know how to make it all by myself. So when I arrived at Nagasaki I secured the services of a little Japanese

girl who was regarded as one of the best tea makers in all Japan. She came to my room and brought her tea kit with her. She spoke a little English, and when I made my wants known, and informed her that I desired to know every trick in the art, she squatted herself on the mat in a bay window and the lesson began. First she lighted an alcohol lamp, although a charcoal brazier is just as good, and placed upon the flame a

quart of fresh, clear water which, in about five minutes, came to a boil. While the water was heating she placed in another kettle a portion of green tea, such as would fill a demi-tasse. She carefully shook the kettle until the tea was spread evenly over the bottom, and when the water in the first kettle began to boil she removed it from the alcohol lamp and set it on the tray until it ceased to bubble. When it stopped seething she poured a sufficient quantity of the hot water over the tea to fill a small tea cup, and then, as quickly as possible, poured it out, without letting it steep at all. Right there was the trick."

Another writer (from whose style I suspect her to be a woman), in the columns of the *New York Mail and Express*, gives some good advice on the same subject. She had just been reading something from the pen of Dr. Goodfellow, an English analyst of repute. "To begin with," she says, "Dr. Goodfellow insists on earthen teapots, of which there should always be two, and they should be comfortably warmed and thoroughly dry before being used. Then put the required amount

FIG. 37.



TEA PLANT.

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of tea in the pot and allow it to remain with the cover on for about half a minute. Next pour on the boiling water as quickly as possible and let it stand from three to five minutes, according to the kind of tea used. In the case of the Chinese teas, four to five minutes might be allowed. In the case of the Indian and Ceylon varieties, three to four minutes will be sufficient. The infusion should then be used at once, or if necessary for it to stand, pour it into the other hot teapot. Now, as to the effects of the cup which 'cheers but does not inebriate.' The three principal soluble constituents of tea are theine (which acts on the nervous system), an aromatic oil, and tannic acid (which is the injurious ingredient of tea). In carefully prepared tea the two first abound and the latter only appears in a minimum quantity. Deep color in common tea is due simply to the tannin which is present. Such tea is usually poor in theine—the stimulating property—which is colorless. Taken in moderation, properly prepared tea stimulates the nervous system, the circulation, and creates activity of the sweat-glands. Theine acts as a general rouser to the brain." This writer concludes as follows: "In a condensed form here are six golden rules for tea lovers: (1) Always use good tea. (2) Use water which has just got to the boil. (3) Infuse about four minutes. (4) Do not allow the leaves to stand in the infusion. (5) Avoid second brews and used tea leaves. (6) If suffering from heart or nervous complaints, only use the very finest qualities of tea, with short infusion. If this cannot be afforded, give up tea altogether."

Steeping the tea leaves, as is quite too common with us, extracts the tannin, and this is not a wholesome property. To say the least, it is constipating, and if freely used is an irritant. Some writers call it a poison. Aside from these important facts, the aroma of the tea which imparts its delicious flavor, is entirely lost by steeping and allowing the tea to stand long after it is prepared. Miss Neilsen says: "Never use sugar or milk, and above all things, do not steep it for a second." I should say that sugar and milk or cream will not render it unwholesome, and therefore it may well be left to the taste of the drinker to add or withhold these usual accompaniments as may be preferred. Recurring once more to adulterations, it may be said that adulterations of tea are much more deleterious to health than those commonly practised in coffee.

### ENGLISH CHICORY,

which is similar to our dandelion, is extensively employed in supplying the market with cheap coffee. It possesses little of the properties of genuine coffee, and no substitute for it medicinally. Not content with adulterating coffee with chicory, the grasping dealer often adulterates chicory with scorched wheat, peas, acorns, rye, beans, corn,

carrots, etc., and to such an extent that those who purchase packages ready burned and ground, labelled "coffee," do not know what they drink. The only plan for the consumer who desires to use only pure coffee is to purchase the berry before it is ground. If it costs more it is simply because it is not adulterated, while the ground article is cheaper for no other reason than because it is composed of something cheaper than the coffee berry. These coffee adulterations may be easily avoided; it would be a comfort if those of tea could be as surely excluded. There are those who may be benefited by adulterated coffee because the pure article does not agree with them. For such people the greater the adulteration the better, if only harmless admixtures are used. Chicory is indicated as a valuable addition to the genuine coffee berry for people of bilious tendencies, if used in moderate quantities. Various kinds of so-called coffee prepared from the cereals may, in many cases, do well if used alone or mixed with pure coffee for those who cannot use the latter in its purity. Now and then one is met with wherein the use of pure coffee will cause irritation attended with pain in the region of the heart, technically called *cardialgia*. This symptom will be sure to manifest itself even with moderate indulgence in some cases, while in others only slightly predisposed to such pain, it appears only when the beverage is prepared with unusual strength or used two or three times per day. Such individuals would do well to add two ounces of pure English chicory to every pound of the coffee berry, and when thus prepared and made ready for the table, mix it with equal parts of some cereal coffee after it has been made ready for the cup. By pursuing this plan it will in most cases be found that a tolerably good flavored coffee may be used without the recurrence of pain in the region of the left side. But all such persons should use even this preparation in moderation, say one or perhaps two cups per day. In many diseases, especially spasmodic nervous affections, such as epilepsy, chorea (St. Vitus's dance), and in spermatorrhœa, coffee aggravates the condition of nervous "high tension," and should be avoided; and whether conducive or not to the diseased state of the blood vessels which constitutes the apoplectic condition, it is one of the things which apoplectic persons should leave alone.

In concluding my remarks on tea and coffee, I may add incidentally that we are not now dependent upon the Chinese for tea. The Japanese are fully abreast, if not ahead, of their Mongolian neighbors. The English raise an excellent article in Ceylon, and the Yankees are also producing it in good quality in one or more of the Southern States.

#### ALCOHOLIC DRINKS.

As previously remarked in introducing what is said on "The Liquids we Drink," every people under the sun have ever had their



favorite stimulating beverages. In fact, scientists believe that the human stomach does some brewing for itself, and if so, none can escape the presence in the system of a little alcohol. I ventured many years ago, in *The Health Monthly*, to say that such was probably the case, not knowing that the idea had ever been broached before. But in looking up this subject I find that Steinmetz's "History of Tobacco," published about the middle of the nineteenth century, is quoted as having said: "I feel compelled to believe, in advance of Liebig, that alcohol is absolutely generated in the digestive process of all animals." An article in the *Food and Fuel Reformer* in 1875 tells us that Dr. Dupré in

FIG. 38.



THE MAN WHO DRINKS MODERN LIQUORS.

the course of his investigation discovered that alcohol is found in small quantities in the excretions even of persons who do not touch fermented beverages in any form; that is, the healthy system of the tectotaler brews, so to speak, a little drop for itself.

Dr. Edward Curtis, while occupying the Chair of Materia Medica in the College of Physicians and Surgeons in New York, in a letter to one of our metropolitan journals, gave his testimony as follows:

"Some late researches make it more than probable that a certain amount of alcohol is regularly formed

in the animal economy, since a substance answering all the tests of alcohol has been detected in small quantity as a regular ingredient of the blood and certain secretions, both in animals and in men who had taken no alcoholic drink for years."

*The National Druggist*, published in St. Louis, tells us alcohol can be found in almost everything. "Müntz, several years ago," says this periodical, "showed the almost omnipresence of alcohol in nature. He found it in the air, the cultivated soil, between the paving-stones of the streets, in sewers, rivers, and the sea. Only the waters of certain springs were found to be absolutely free from the substance. After the astonishment experienced on first hearing such a statement, reflection will convince anyone that nothing is more natural. Decom-

posing organic matter is everywhere, and decomposition is but one of the forms of fermentation, and the products are carbonic acid and alcohol—and the diffusion of these is but a sequence or corollary. Cold rains and freshly fallen snow are richer in it than warm rains. Sewage water is especially rich in the substance, and cultivated soil yields really appreciable quantities. As siloed fodder is simply green fodder stuff, wilted and exposed to a form of fermentation, nothing can be more natural than that alcohol in very appreciable quantities should exist, and that sometimes there should be sufficient to affect animals that eat the fodder."

The unrestrained appetite for it seems almost universal. Even other animals than man seem to take to it from natural inclination or perverted taste. *The Literary Digest* translated from the *Revue Scientifique* an article which states that "the taste for alcohol is not the privilege of man alone. It is well known that the horse will eagerly drink a quart of red wine, and that dogs love beer. The exploits of Gideon in Zola's 'La Terre' attest from the stand-point of literature the bacchic tastes of the animal. *Médecine Moderne* tells us of a demonstration made by Mr. Tutt, of London, that even butterflies may go on a spree. In a public lecture Mr. Tutt shut up in a case male and female butterflies with flowers of divers species. Now, while the female butterflies quenched their thirst modestly by sipping a few drops of dew in the calyx of a rose, the males indulged in characteristic intemperance. They went straight to the flowers whose distillation produced the most alcohol, and indulged in their juices till they fell senseless where they stood. The butterflies were dead-drunk. To further convince his auditors, Mr. Tutt introduced into the case a glass of water and several glasses of brandy. The male butterflies, without hesitation, chose the brandy. The fact does not admit of doubt. Male butterflies in a state of freedom are often attracted by the emanations of a glass of gin that has been left on a garden table, and having drunk of it to excess, sleep the heavy sleep of drunkenness."

#### DOCTORS DISAGREE.

Notwithstanding the general tendency of the animal, human or otherwise, to sip of this treacherous nectar, doctors and scientific writers in discussing the liquor habit greatly disagree. They have been investigating the properties and effects of alcohol with much persistence during the memory of the oldest inhabitant, and there has as yet been no unanimous verdict as to its properties and effects. On the one side we have a large and intelligent band of reformers who proclaim that all malt, vinous, and distilled liquors are a curse to the race and are only productive of evil. They would not employ them even as medicines. On the other, there are physicians and scien-

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ties who insist that they possess virtues which, if used intelligently and not abused, may add to the sum of human happiness. Some experimentalists deny that they possess any of the properties of food, and others will cite remarkable examples to prove that they do. When doctors thus disagree, we can only fall back on the experiences of the human family, and each for himself draw his own conclusions. So far as the writer's observations enable him to speak, he would say that malt liquors which are almost universally used among the most advanced nations of the earth may be considered wholesome, if used in moderation by lean, nervous and bloodless persons; but they are not adapted to individuals of full habit. In extreme moderation they may doubtless be taken without any manifest injury by the latter; but under strictly hygienic rules such beverages are only suited to those who need "building up," to use a common expression.

The same rule applies to other fermented liquors known as wines. In some conditions of the stomach, whereon digestion and assimilation are not active, the temperate use of wines with food may at least allay the uncomfortable symptoms of dyspepsia, but the pro-

FIG. 32.



THE TEMPERATE MAN.

FIG. 33.



THE ATROPHY OF A PERVERTED LIFE.

habitualist will tell you it is because they produce an anesthetic or sedative effect, that they simply deaden sensibility. An anti-galvanist will as confidently assure you that they awaken the digestive machinery and stimulate it to healthy action. Wines doubtless have their uses as well as abuses.

Some years since Dr. Edward Jones, whom we have already quoted, contributed an article to the *New York Tribune*, in which he claimed that alcohol, if used within certain limits is transformed like cod-liver oil without injurious effects; that used in excess it produces a well-known train of perturbations of function, that even the early phases of alcoholic disturbance, which are often ingeniously termed "stimulating," are part and parcel of the injuriously disturbing in-



ence of over-dosage, and must therefore be put in the same category with the more seriously poisonous effects of pronounced intoxication."

"Alcohol," said this writer, "has thus a twofold action. First, it is capable, in proper dose, of being consumed and utilized as a force-producer; in which case there is no visible disturbance of normal function. Such action cannot be distinguished either by the drinker or the physiologist from that of a quickly digestible fluid food, and is no more an 'excitement' or 'stimulation,' followed by a 'recoil' or 'depression,' than is the action of a bowl of hot soup or of a glass of milk. The second action is the poisonous influence of an excess of alcohol circulating in the blood, which makes itself sensible to the drinker by peculiar sensations and disturbances, and is not only followed by 'depression,' but is itself a form of depression—that is, a disturbance of balance; an unnatural perturbation of the normal working of the functions."

Dr. Curtis then proceeds to say that no one rule can be given as to the quantity which a person may safely use. The "poison line" is a shifting one. "Even in health it varies according to age, sex, individual peculiarity and habit, and even in the same person according to his physical condition for the time being."

This rational and scientific treatise was at once attacked by T. H. Taber, of Illinois, who, in a communication to the same paper, quoted Dr. W. B. Carpenter, Dr. E. Smith, F.R.S., Professor Lehmann, Professor Moleschott, Dr. T. K. Chambers, and many other prominent authorities, all of whom were made to appear quite antagonistic to Dr. Curtis's views and conclusions; but early in 1899 Professor W. O. Atwater and his aids at the Wesleyan University, Middletown, Conn., made original and very careful tests of this matter by the aid of specially devised apparatus, and the results confirm Anstie's and Curtis's claim that a small amount of alcohol (about two ounces in small potions during twenty-four hours) can be consumed in the human system, as a fuel food, for production of bodily heat or energy. The energy of alcohol cannot be stored in the body (as can that gained by eating fat or sugar), but is developed and spent at once by immediate oxidation (burning). From the point of view of cost two ounces of alcohol per day is not an economical form of food, and it may yet be learned that it is not economical from a physiological stand-point, if it should be discovered that its fuel-food value cannot compensate for its poison properties or depressing effects on vital functions.

Dr. Egbert Guernsey, a homeopathic physician, in the *Medical Union* gave expression to opinions which most people, not warped by extreme prejudices, would be likely to endorse.

"A slight examination of alcohol as a narcotic, its depressing and poisonous influence on the human system," he says, "will be sufficient





erty added to a mash of decaying vegetables, or to fermenting syrups, arrests the chemical change they are undergoing.

In persons of greatly reduced strength, and having an insufficient supply of nervous vitality, alcohol seems to furnish, temporarily, at least, a substitute for nerve-force, which carries them over an unbridged chasm, and sustains them until the recuperative powers of nature can rally to their assistance. Facts sustaining this statement have come under the observation of every physician, or nurse, in either acute or chronic practice. At moments when a patient seems to be in a sinking condition, the administration of an alcoholic stimulant in the form of brandy, or of vinous liquors, will revive him.

Alcohol is an almost indispensable agent in the laboratory, in the preparation of tinctures and extracts. The virtues of many plants would be lost without the aid of alcohol to extract them. After this extraction, however, the alcohol may be "turned out of doors," by evaporation, so that it is not an indispensable part of a treatment to administer this poison to the patient whose physical condition would not require it.

For the same reason that vinous and distilled liquors are beneficial to some people, they are dangerous and injurious to others. Those having healthy blood, and plenty of nervous vitality, may carry the thickening of the one, and the stimulation of the other, too far, so that the former be made too sluggish in its circulation, and the latter excessive in its action. The blood, becoming too thick, congests the minute and sensitive arteries and veins of the brain, and causes apoplexy, congestion of the brain, etc. The nervous system, maddened by excitement, renders the brain a victim to all sorts of mental vagaries, ending, if carried beyond a certain limit, in delirium tremens.

The evil of alcohol is its power to dethrone reason, and lead its victim a drifeling captive to poverty, vice, and crime. It enables people to overwork mind and body; to revive spirits depressed by social dissipation; to put to rest a stomach loaded with unwholesome viands; to silence the voice of an outraged conscience; to drown the woes which a reckless life has engendered.

Alcohol *disease* is a terrible malady. It is attended with constant and insatiable thirst, and the victim seems powerless to reform. Dr. Day, of the Binghamton Inebriate Asylum, says that dissections of dead drunkards betray enlargements of the "globules of which the brain, blood, and other organs are composed, so that those globules stand open-mouthed, as it were, empty, athirst, inflamed, and eager to be filled." To people thus afflicted, who have reformed, and seemingly got the better of the disease, alcohol in any form is a dangerous medicine; and physicians should exercise great caution when such cases come under their care. There are, undoubtedly, quite as many

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affected with alcohol disease as with dyspepsia—possibly more—facts which exhibit the evils of excessive drinking, as well as those of excessive and ill-timed eating. All intemperance has its physical as well as moral penalties, which sometimes fall with crushing weight on those who do not study their constitutional peculiarities, and confine themselves to such habits in life as in their best judgment promote strength of nerve and purity of blood.

### DRUNKARDS ARE NOT PROPERLY TREATED

to effect their reformation. Men of unfortunate habits are daily arrested in our large cities, dragged to dark and dismal cells, locked up for the night, and in the morning taken before the police magistrate, charged with gross intoxication, when they are either "sent up" for thirty days, or fined ten dollars, or, perhaps, in some cases, both penalties are inflicted. A man who is in the habit of getting drunk will not think much of ten dollars after he has taken the third horn, and by the time he has taken his tenth, he becomes too oblivious to care whether he sleeps in his own bed at home, or upon the floor of a cell at the station house. But he awakens in the morning to find that he has taken one more step in disgracing himself and, with his self-respect considerably lowered, he emerges from his cell to receive his examination and sentence. As many times as he gets drunk, so many times is he put through this process of degradation, until every particle of manhood is thoroughly worked out of him. The proper way to treat slaves to an inebriate appetite would be to sentence them to ten days of instruction on the injurious effects of intemperance upon the stomach and nervous system. It would be public economy to employ good lecturers, who could portray in stirring words, such as the late John B. Gough uttered, the misery entailed, morally, socially, and physically, by intemperance, and at the same time exhibit by anatomical plates, prepared expressly for the purpose, the serious injuries the digestive and other vital organs suffer through the effects of inebriety. Every large city could well afford an institution of this kind, with every facility for improving the minds and morals of those who are picked up drunk in the streets. In the rural districts, every county could economically make such an investment, and in this way a multitude of inebriate homes could be sustained at no greater expense than is now incurred in punishing the offenders of law and good order, who are made so through intemperance in the use of ardent spirits. Many young men go on a spree without thinking they receive more than temporary injury, which a little attention to diet, etc., for a few days, will overcome; and many a hardened toper thinks when he takes a notion to stop the use of intoxicating drinks, that will be the end of it. Such uninformed persons should be taught better. There is no prospect

of their receiving the necessary tuition, so long as they are simply fined and imprisoned for becoming intoxicated.

Having hastily reviewed the constituents and physical effects of the most common beverages concocted by man, and passed some strictures upon them and their consumers, I will now call the attention of the reader to those fluids which Nature has so abundantly furnished for the use of mankind. Many may be surprised to find that these are not entirely above criticism.

#### MILK IS THE FIRST FLUID

permitted to enter the human system; and, perhaps, considering the ignorance, indiscrimination, and reckless folly of the mass of human animals, it were better if others had never been provided. Milk contains all the elements of wholesome food, and all that is necessary to the sustenance and growth of the animal organism. Its constituents are water, sugar, butter, caseine, or curd, and the various salts necessary for the support of the system. The sugar of milk is less apt to produce acidity of the stomach than the sugar of vegetables. It is prepared in Switzerland for food, and exported for the homeopaths, who use it in making their little medicated pellets. No milk, except that of the elephant, contains so much of this sugar as that from the breasts of woman. Indeed, all the constituents of milk vary considerably in their proportions in different animals. Compared with that from the cow, woman's milk contains not only more sugar but more water, and usually more salts, while it contains less butter and caseine. This difference renders it impossible to make cow's milk a perfect substitute for that from the breast of the mother for infants. If common sugar be added to the milk of the cow to make up a deficiency in this property, and water to lessen the excessive supply of butter and caseine, the babe becomes affected with sour stomach and indigestion. If the cow be fed on improper food, such as still slops, its milk becomes a still poorer substitute for the mother's milk for the child, because it contains a still less supply of sugar of milk and natural salts, and an excessive quantity of caseine. The deficiencies and inequalities are sometimes regulated by shrewd dealers, but the milk cannot be made to possess the properties of that of a healthy grazing cow. When given distillery slops the milk may contain alcohol, and thus initiate in the infant a craving for alcoholic drinks. H. Weller is said "to have found positive evidence of alcohol to the extent of 0.96 in the milk of a large dairy attached to an important distillery where the cows were fed on distillery slops containing 5.9 per cent. of alcohol." The *Medical Record* is quoted as saying: "This milk was stronger in alcohol than most beers, but in what quantities it was given is not stated. The milk examined was perfectly fresh, free from acidity, and in most other

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respects normal, having a specific gravity of 1.0335, with total solids of 13.37 per cent., of which 3.79 was fat." Milk is extensively adulterated in large villages and cities. A man living in the suburbs of the City of New York was reported to the President of the Sanitary Commission as a fabricator of milk by chemical composition, as follows: Sugar, roasted, imparted the yellow color; oil produced the fat; eggs gave an appearance of richness; starch was added to represent the caseine or curd; all that was necessary in addition was water. Other equally deceptive imitations are made by diluting good, or swill milk, and adding yolks of eggs, sheep's brains, flour, subcarbonate of potash and chalk. Although killing to small children, so much is not to be feared from these adulterations as from milk obtained from diseased animals. Cows are kept the year round in stables by many dairymen in cities, or adjacent thereto. By confinement, if not by bad food, they become diseased, just as men and women do when shut in from open air and exercise. Their diseases, as a matter of course, render their milk unwholesome and innutritious. When, together with confinement, cows are fed on still slops, their milk becomes actually poisonous. Some hard stories are related of dairymen who, it is said, keep their cows closely tied up in sheds, and fed on still slops till they actually drop dead in their stalls. From the specimens of milk that I have seen, and the dishonest character of some of those engaged in the milk traffic, I am not disposed to doubt their entire truthfulness.

The shocking consequences of such speculative recklessness fall with particular severity on the juvenile portion of a metropolitan population, and it is sad to contemplate that the perversity of man can lead him to the perpetration of such wholesale slaughter of innocent babes, who, by reason of maternal disability, are denied the nourishment of a mother's breast. But the cupidity of the unprincipled money-seeker knows no limit, and the fact that such impositions are practised, should lead the consumer to guard himself against them. "It is a mistake, however," as remarked by R. A. Pearson, B.S., "to consider that milkmen are naturally a lot of tricksters. Honest men are in this business as well as any other, and one of the most important steps toward securing honest milk is to encourage the honest man by giving him deserved trade." The same writer remarks: "The practice, which seems to be growing among customers, of visiting the farms and stores from which their milk comes, cannot be too highly commended."

### AN IDEAL STABLE FOR COWS.

For the farmer who would provide his immediate family with wholesome milk, and for the dairyman who honestly desires to serve a product that is above reproach, it would not be out of place to give herein a description of an ideal stable for the sheltering of cows, as

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recommended by Dr. John B. Crosby, Commissioner of the Board of Health of New York. "The building," he says, "should be made in a substantial manner and be free from draughts. It should give each animal not less than 600 cubic feet of air room—800 is better. It should have windows on all sides to furnish a liberal supply of light and air,

FIG. 41.



TEETH OF A GRAZING COW.

and the first floor should be made absolutely water-tight, by means of asphalt, cement, or concrete. The roofs should contain ventilators. The cows should have individual stalls, and should stand back to back,

FIG. 42.



TEETH OF A STALL-FED COW.

with a broad passage between. Once a day the cattle should be removed and the floor thoroughly washed down, and the building aired. All wood-work should be frequently whitewashed. Finally, all those engaged in milking and handling the milk should be clothed in complete sets of clean overalls, and everything about the milk-house should

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be kept in the most scrupulously clean condition." I would add that milkers should not only be healthy, but they should go to their duties with hands washed as clean as if they were about to attend a fashionable reception, and their clothing should be as neat, if not as "swell."

The latter portion of Dr. Crosby's recommendation is exceedingly important when it is borne in mind how easily milk may become a virulent poison by the introduction of ptomaines, when carelessness and uncleanness characterize the habits of dairymen or of those in the home who have charge of the milk. I have already spoken of the ptomaines in what is said of ice-cream on page 88, and it is not necessary to repeat that warning here.

According to Dr. Crosby, the cows may contract consumption from consumptive attendants or from grazing in the neighborhood of homes for consumptives. And why not, if that disease be really communicable? "A case in point," he says, "is that of a herd of cows being pastured in a field near a home for consumptives where the stronger patients play ball. Four of the five cows in this herd were found to show very marked tuberculous lesions; so that we have here a case of the transmission of the disease from man to animal, as the cows were perfectly healthy when purchased two years prior to the inspection." This fact would show the necessity of keeping consumptives off the pasture grasses, and also suggest to the farmer and dairyman the prudence of employing no one with tuberculosis to attend upon the herds, either as stablemen or milkers. Cows, as well as human beings, may from some cause be made quite susceptible to the disease, and when such sensitive creatures are pastured or stabled where they may inhale the powdered dry sputa of consumptives, it is quite possible for them to contract the malady. The New York State Commissioners on Tuberculosis, from certain data obtained by them, believe that "6.93 per cent. was about the true proportion of diseased animals." "Out of one herd of thirty-two cows," says Dr. Crosby, "twenty-eight were marked cases, and it was found by actual count that about eighty children were using this milk daily as the greater part of their food-supply." If these children were in a vigorous condition, it is quite probable that the consumptive bacilli, if present, were destroyed by the gastric secretions of healthy stomachs, but if, as is quite possible, there were weaklings among them, no one can tell how much mischief was done. I am not alone in this view of the matter, for Dr. C. A. McQuesten, Secretary of the United States Board of Examining Surgeons of San Francisco, declared it as quite true "that many healthy persons can drink infected milk with impunity," but he added that "anyone can see that it is rank suicide for a consumptive person to drink tainted milk." While it is reasonable to suppose that a consumptive individual may contract tuberculosis by imbibing tainted milk, it may, neverthe-

less, he said that it is mostly the inhalation of the dried sputa of those affected with tuberculosis that communicates the disease, if it indeed be communicable, and not the use of the mammary secretions of a diseased mother or cow; but the use of milk from consumptive mothers, wet nurses, or cows, cannot fail to cause deterioration of the blood, and thus render the child a susceptible victim to any prevailing malady. If, as many physicians believe, tuberculosis only develops in animals or individuals having at least a taint of scrofula, the milk of consumptives is liable to impart that taint to the blood of children or adults who use such impure milk and thus lay the foundation for extreme susceptibility to tubercular affection. This being the case, consumptive mothers should not feed their babies at their own breasts, and consumptive cows should not be utilized for their milk or meat.

FIG. 43.



A FAMILIAR SCENE ON THE FARM.

## HOW TO PURIFY MILK.

"The wide area over which milk is collected for supplying a large city," says the *Popular Science Monthly*, "renders it practically impossible to regulate the supply in a hygienic way by control of its sources. For this reason some general method of purification, which can be applied to the milk in bulk after it has been collected, becomes an essential to a safe product for general consumption. The ordinary tests, while fairly accurate in determining adulteration, are of no value in indicating the presence of disease germs or ordinary dirt. In fact, nearly any sample taken from the milk wagons of a city will be found to contain a number of bacilli which would immediately condemn any water as unfit for drinking. Sand filtration has been practised for several years in some continental cities, and apparently with very satisfactory results. The filters used by Messrs. Boll, large milk dealers of Berlin, consist of cylindrical vessels divided by horizontal perforated

diaphragms into five superposed compartments, of which the middle three are filled with fine, clean sand, sifted into three sizes, the coarsest being put into the lowest and the finest into the uppermost of the three chambers. The milk enters the lowest compartment, and, having traversed the layers of sand from below upward, is carried by an overflow to a cooler fed with ice-water, whence it passes into a cistern, from which it is drawn direct into the locked cans for distribution. The filtered milk is not only freed from dirt, but the number of bacteria is reduced to about one-third, without sterilizing. The loss of fat is, in new milk, stated to be small, but the quantity of mucus and slimy matter retained in the sand—which is, of course, renewed every time—is surprising.”

All this is suggestive to the large milk producer, or milk dealer, the hotel or boarding-house keeper, and with a little tact and ingenuity on the part of farmers' wives and those who only keep a cow or two, it is a lesson to them. The latter can hardly go to the expense of any such apparatus as that employed by the Berlin concern, but little ingenious ways can be devised in the home for properly and thoroughly filtering the milk acting upon the hints given in the quotation. The immediate cooling of the milk is also important, especially when it has to be put into close cans for transportation. Ptomaines may otherwise be generated, which may change a nutritious fluid to a dangerous poison. This change may also occur if the milk be stored in open vessels where there are tainted meats. Milk should not be kept on the same shelves nor in the same closets with animal food. These facts make one almost afraid to use one of the most useful products of civilized life. It is said that in Ceylon they have a cow-plant yielding a milk which serves as food for the Cingalese. Oh! for acres of the cow-plant on every dairy farm, and a plant or two in every barnyard! Still, such precautions are being taken by the Board of Health and milk inspectors to insure the purity of milk in large villages and cities, we may soon reach an era of entire safety, if small home-producers in sparsely settled communities will properly look out for themselves and for their rich relations from the city who smack their lips with complacency over a glass of pure country milk. Unless a person possesses some chemical knowledge, it is not an easy matter to advise him how to detect adulterations or fabrications of milk. When a sediment is detected, and little or no cream rises after the milk has been put away for a few hours, or when it has then a bluish appearance, or when it does not leave whitish globules clinging to the glass from which it is taken or poured, it is at least to be suspected. It is related of a young society lady, who had been reared in a city, and was for the first time spending a few days at a farm-house, that she was disgusted with the milk because a scum formed on it after standing for the night! She had not been accus-



tomed to the use of milk rich in cream. She was acquainted with the cream of society, but not with the cream of the country milk-pan. Good milk usually exhibits the "scum" that the young city lass observed, after it stands for a while. When milk is blue, it may be due to having been watered or skimmed, or to the presence of much disease-producing bacteria, which may impart that color. When having a bluish tint it may well be condemned.

Milk is often rendered unfit for use by something the cows have eaten. It is difficult to detect such milk by the test suggested. What are commonly known by the names of "swamp sickness" and milk sickness are fevers induced by poisonous herbs eaten by the cows. In the spring of the year milk is sometimes made unsavory to the taste by the leeks that the cows have found and eaten in the pasture. Turnips fed liberally to a herd of cows will give the milk the flavor of that vegetable. As before related, the milk of cows fed on still slops may contain quite a percentage of alcohol. Farmers and dairymen cannot exercise too much care in the selection of the food they provide for their milk-giving animals. Impurities of the nature herein described can hardly be detected except by the flavor of the milk. It is always the safer plan to reject that which does not possess the usual sweet taste to which one is accustomed while sipping the delicious lacteal fluid.

*Pure* milk is not congenial to everyone. In some, by its dilution of the gastric fluids of the stomach, together with the resistant action of its oily property, the generation of vital electricity is impeded and drowsiness induced. This is especially so in a case of bilious predisposition. In others, who are predisposed to catarrhal difficulties, the caseine of milk increases slime, and tends to aggravate the complaint. But with the majority of people, milk is a highly nutritious drink, and when copiously added to tea and coffee, often renders these beverages harmless to those who otherwise could not use them. To use milk as a beverage, most perfect digestion is required. Weak stomachs cannot tolerate it when it is taken down by the glassful. Babies seem to thrive on it, but just see how they take it. Their little jaws work just as ours do when we masticate our food. This motion of the jaws liberates the salivary secretions, and these mixing with the milk prepare it for the gastric secretions of the stomach and for easy digestion. If adults who think they cannot use milk without inconvenience would take it by the spoonful and move the mouth as when eating, with each sip, most of them would find that they could take milk and feel the better for it. I claim no originality for this suggestion. Many years ago Dr. Frank Fuller, of the Health Food Company, imparted this information to me, and ever since I have been able to put many of my patients on a milk diet, who could not make use of it before. It is valuable, and do not forget it.

## MILK SHOULD NOT BE BOILED.

A writer in the *British Medical Journal* tells us that "there are reasons for supposing that when fresh milk is taken into the stomach, the living cells are absorbed at once, without any digestion; that they enter the blood-stream and are utilized in building up the tissues; that the caseine of the milk is digested in the usual way of other albuminoids by the gastric juices, and absorbed as peptone; and that there is also absorption of serum-albumen by osmosis." This writer would seem to advise against the somewhat common practice of boiling milk. Indeed, this plan is often advised for the purpose of destroying any injurious germs. It is unnecessary, as will be seen farther on. "In the boiling of milk," he says, "the chemical result is to kill all the living cells and to coagulate all the albuminoid constituents, and the milk after boiling is thicker than before; the physiological results are that all the constituents of milk must be digested before they can be absorbed into the system, and therefore there is a distinct loss of utility in the milk, because the living cells of fresh milk do not enter into the circulation direct as living protoplasm, and build up the tissues direct, as they would do in fresh, unboiled milk. In practice it has been noticed that there is a distinctly appreciable lowered vitality in infants who are fed on milk that has been boiled—that is, the process of absorption is more delayed, and the quantity of milk required is positively larger for the same amount of growth and nourishment of the child than is the case when fed on fresh milk." We must not, therefore, undertake to dispose of mischievous bacteria or other disease germs that may possibly be formed in milk by boiling it. We must resort to filtration and sterilization. Both of these processes can be adopted with a little ingenuity and patience by the painstaking house-keeper. Any vessel which will allow the milk to filter through clean sand will relieve it of its grosser impurities, and sterilization, as suggested by the process in "Facts About Milk," issued by the U. S. Department of Agriculture, will destroy the bacteria. In brief, it is as follows: Take a tin pail of sufficient size, having a cover. Make an aperture in the latter which will closely admit a chemical thermometer so that the bulb will reach the water which is to be poured into the pail. Place in the pail a tin pie-pan, well punched with holes, and bottom side up. Put one or more bottles in the pail in an upright position after nearly filling them with milk, and plugging them with absorbent or other clean cotton sufficiently to fill their necks. The water should then be poured into the pail until it rises to the level of the milk in the bottles. Thus arranged, set the pail on the stove, and heat the water until the mercury in the thermometer rises to 155 degrees Fahrenheit, or in winter to 100 degrees. Then remove it, and keep it tightly covered

for half an hour. A heavy cloth over the pail will help to retain the heat. This done, remove the bottles, keeping the cotton plugs as dry as possible, and place them in cold water or on ice, where they should remain without removing the plugs until the milk is wanted. In this way a novice may sterilize the milk, and as the heat has not been raised to the boiling-point, the product cannot be regarded as boiled milk, nor is it open to the same objection. Even if it were boiled, it is better than to imbibe disease-producing bacteria. The evils referred to in the *British Medical Journal* are not so perilous. But by the process given above, the milk is not heated to the boiling-point, and yet it is sufficient to destroy any dangerous organisms, and to make the milk keep indefinitely. It is not as digestible as raw milk, but is much more so than when it has been boiled. About 212° Fahrenheit are required to bring it to a boil.

It is simply astonishing how rapidly bacteria will generate in milk. It seems to be especially suited to their rapid reproduction. It is said by experts that milk taken from a healthy cow early in the morning contains only a small number of bacteria—not more than nine or ten to the cubic centimetre. At about eight o'clock in the morning it may contain 750,000, and twenty-four hours later 7,500,000 in the same small quantity! *Modern Medicine and Bacteriological Review* is responsible for the surprising statement that "Conn has shown that germs may multiply at the rate of doubling every hour, thus producing in three days the inconceivable number of 4,772,000,000,000,000!" This is, of course, when the temperature favors. Perhaps Professor Conn's Uruguay Bacteria No. 41, for improving the flavor of cream and butter referred to in the opening chapter, are more high-toned and more powerful than the common herd, and if so, they might serve the purpose of exterminating the mongrel hordes that increase so rapidly when added to milk or cream. War, civilization, and evolution may not be the monopoly of the human family. Fortunately, most of the low organisms, if from a healthy cow, are harmless; if from tuberculous creatures, quite otherwise.

#### RELIABLE MILK IS COMING.

Since the germ theory has obtained such wide attention in this and every other civilized country, the producers of milk are vying with each other in their efforts to show to their customers healthy cows, well selected pasturage lands, clean and nicely kept cow stables, having plenty of air and sunshine, perfect ventilation, clean floors, and hygienic surroundings. It is even said that in old Rome all cows are subjected to rigorous examination by skilful veterinarians, and when they do pass the required examination, certain marks indicating the fact are placed on their horns, and the owners are provided with licenses to sell

milk. In England, Germany, France, and elsewhere, hygienic authorities are active in devising plans to insure the health of children and adults who are more or less dependent upon large producers for their supplies of milk. In this country, too, both the authorities and the people are thoroughly aroused to the necessity of general reform in the milk trade. The tubercular test introduced by Koch is resorted to when cows are suspected to have any taint of consumption, and all diseased animals are immediately slaughtered. Enterprising business

FIG. 44.



A FIRST-CLASS PALACE FOR THE KINE.

men with the requisite capital are taking a hand in the production of pure milk and are establishing dairies in the neighborhood of all our principal cities, and are extending their operations into Canada and even into England. There is no limit to Yankee enterprise when it once mounts its stile and strides forth to accomplish anything it has in view. It enters upon the industry in a business-like manner, and starts out with stables which might well be called palaces for the kine. The floors are concreted, and the inside trim is so constructed as to enable the attendants to keep the place as clean as a well-ordered kitchen. Physicians are employed to look out for not only the health of the cattle, but to supervise the men and women employed about the stables. All employees are required to have clean and suitable clothing, and to enter upon the task of milking with hands thoroughly



washed in the presence of the superintendent. Everything for the care and storage of the milk is provided for in the same lavish manner, and all the most approved processes for filtering and sterilizing are scrupulously practised. As expressed in one of the announcements of an enterprising company, "the safeguards that have been placed around the production of milk may be enumerated as follows, namely: The veterinary care of the herd, and its protection against tuberculosis, sepsis of the udder, and other infectious diseases of the cow herself; the medical care of the attendants, in regard to their health, the hygiene of their home, and the practical quarantine of the farm; the careful sterilization of milkers' clothing, and the cleanliness of their hands and arms during the process of milking; the care of the cows, the absence of manure in the barns, the practical exclusion of fecal matters from the milk, and precautions against the entrance of dust; the extraordinary precautions placed around the milk in the milk-house, and in the progress of transportation and delivery."

#### KUMYSS, BUTTERMILK, ETC.

Milk which has undergone some sort of fermentive change sometimes seems to be more digestible or acceptable to weak stomachs than ordinary milk. Very likely the action of millions of useful bacteria helps to break apart the solids—especially the caseine of the milk—thus performing a process which may be almost called predigestion. Thus, ordinarily soured milk may agree with some folks better than sweet milk, especially if it is well shaken before taken, or put through a little churning. It is perhaps superfluous to describe the making of buttermilk. The fact that the butter or fatty portion of the milk is removed, leaves buttermilk less rich than pure milk, and for this reason more acceptable to some stomachs. But aside from that difference it has less sugar of milk, and a new ingredient called lactic acid, which gives it the sour flavor. Lactic acid in buttermilk sometimes seems to have the property of killing out other deleterious acids which are formed by fermentive changes in unclean stomachs. So it happens that buttermilk may often be a good food for those troubled with sour stomach. In consequence of the presence of lactic acid, M. Robin, an eminent French chemist, recommends its use to keep the system free from clinkers. He says "that the mineral matter which constitutes an ingredient in most of our food after the combustion, is left in our systems to incrust and stiffen the different parts of our body, and to render imperfect many of the vital processes." He compares "human beings to furnaces which are always kindled; life exists only in combustion, but the combustion which occurs in our bodies, like that which takes place in our chimneys, leaves a detritus or residuum which is fatal to life." This, he claims, the free use of buttermilk will remove. Another physician, in

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a paper read before the French Academy, asserted that "this product of the churn contains an acid which destroys the incrustations that form on the arteries, cartilages, and valves of the heart, and that a constant use of it would prolong life far beyond the allotted three score and ten years." The change of souring in milk may be produced by a variety of different growing harmless bacteria, and the flavor, whether pleasant or otherwise, depends upon the kind that is in the majority.

Among the Tartars and other nomadic people, it has long been the custom to ferment the milk of mares to produce an alcoholic drink called kumyss. You may spell it almost any way you like—kumyss, koumys, koomis—and there are others. Mare's milk contains so much sugar that it is easily made subject to fermentation, and the amount of alcohol will depend upon the season of the year and the length of time that the fermentation is permitted to continue actively. The alcohol in kumyss varies from 1.65 to 8.62. In our country kumyss is made of cow's milk, to which sugar and brewer's yeast are added to favor fermentation. Sometimes skimmed milk is used. A good formula for making it is the following: "Grape sugar, half an ounce, dissolved in four ounces of water. Dissolve twenty grains of compressed yeast or well washed and pressed out brewer's yeast in two ounces of milk. Mix the two solutions in a quart bottle, and then fill the bottle with cow's milk, and within two inches of the top. Cork well, secure it with wire, and place the bottle in the cellar or ice-chest with a temperature of about 50° Fahrenheit. Give it a good shaking up three or four times a day. In three or four days the kumyss is ready for use." Kumyss may be bought ready-made in many of our large cities. It is used in some acute maladies and in wasting affections, such as consumption, abdominal catarrhs, and Bright's disease. It is both a food and a diuretic. Some patients are put on this food exclusively. In Russia the kumyss cure requires that doses from a teacupful to a tumblerful be taken every half hour up to twelve or fifteen pounds of milk per day! One foreign writer claims that if no improvement in weight occur in ten days the treatment should be discontinued. Another form of fermented milk made by special process, as yet unpublished, is called zoolak. Some find it more agreeable in flavor than kumyss, and it is without the gaseous bubble.

**THE MILK OF HUMAN KINDNESS.**—In taking leave of this interesting subject, I will not close without reminding the reader that, after all, there is no milk that adds so much to the happiness of mankind as the "milk of human kindness." It contains no microbes, good, bad, or indifferent. In noble natures it never sours. In it no ptomaines are generated, nor is it bought with a price. It does not grow dearer, but sweeter, with a scarcity of fodder. It may be drawn from every kind

and generous heart that beats under the mellow light of a beaming countenance, and when once the fountain is touched with the sympathetic hand of friendship, it yields to the grateful receiver without stint or limit. Try it, for the cares that corrode, and the earthy matters that incrust and deaden the psychic nature. Try it even for the physical ills that depress the spirits and rack the diseased body with pain. You who were reared in rural regions will remember to have met with pumps that would yield no water unless you poured a little in. It is sometimes so with the sources of the milk of human kindness. If they seem to be dried up, awaken your own kindly impulses, enkindle your own slumbering beneficent nature, and it will be like adding coaxing water to the unwilling pump. If it has not been your good fortune thus far to have sweetened your life with the milk of human kindness; if you fail to find it in abundant measure among your amiable neighbors, there is something radically wrong that requires correcting right within yourself. In the language of Gerald Massey:

"There's no dearth of kindness  
In this world of ours;  
Only in our blindness  
We gather thorns for flowers."

#### NATURE'S BEVERAGE—WATER.

Water is sometimes the cause of blood diseases. Not only does a considerable quantity pass through the system in some form, but much is retained temporarily, and its bulk fully replaced by the newly taken liquids when the old pass off. Nearly three-fourths of the weight of the body consists of water, and more than two-thirds of the surface of the earth is covered with the same. And what is water? It is a mineral composed of two volumes of hydrogen and one of oxygen. When the mercury in the thermometer falls below 32° Fahrenheit, it becomes as solid as rock. Man's weight being made up of three-fourths of this mineral, he would become as stiff as a hitching post, with his surrounding atmosphere at 32°, or below, were it not for the caloric generated by the vital processes going on within his body! In his stomach he carries a furnace which consumes food-stuffs; in his lungs a gas-burner that consumes oxygen; and in his solar plexus a dynamo producing the electrical forces which circulate the stream of life we call the blood, and promote the active interchange between the blood and the tissues. Therefore the real live man does not turn to ice in frigid weather unless he aspires to Arctic discovery and goes unprotected in search of the North Pole; or, catching the gold craze, hies for Alaska without woollen or furs. But one who is not fully alive, he who is called bloodless, with weak lungs and poor digestion, must seek the tropics or envelop himself in the furs of animals. And this condition may be

induced if he does not give proper attention to the purity of the water he drinks. The water you are now drinking, dear reader, may have quenched the thirst of millions before you ; it may have been used for the morning bath of a fond mother's blessed baby ; you may have sailed over it with genial company on a summer's evening ; it may have turned the wheels of the mill that ground the flour in the roll you ate at breakfast ; it may have been used at the baptism of your ancient sires ; it may have been a part of the frolicking mountain-stream in which you waded with laughing companions when a child. The water you are now drinking has quite likely been used over and over again in all sorts of

FIG. 45.



THE OLD OAKEN BUCKET.

helping to remove the last vestige of uncleanness. Therefore, it matters not how many throats it has moistened, or how much soiled linen it may have washed ; we can take it second-hand if we have given Nature time enough to purify it for our use.

#### PRECAUTIONS TO BE TAKEN.

Notwithstanding what is being done to this end in Nature's laboratory, water should be filtered that is to be used for drinking purposes unless it comes from a deep, clean well, far removed from out-houses, pig pens, barnyards, graveyards, slaughter-houses, and in brief, quite isolated from the abodes of man. About the only region where such wells can be found, is in some small village or sparsely inhabited settlements on farm lands, unless you can draw your supplies from an artesian well, or uncork a sparkling bottle that has been filled

ways in the thousands of years the planet has given life to the animal kingdom. All the immensely big animals, with still bigger names, away back before man made his appearance on the globe, swam in it, plunged in it and quenched their thirst with it. But it matters not what uses it may have been put to in the past ; the only thing to be considered now is its present purity or impurity. With such devices as have been provided by the ingenuity of man, it can be made pure if Mother Nature has not already attended to this important matter in her extensive laboratory. The "old dame" is constantly distilling the world's supply. Running water precipitates all organic impurities, and the action of air and sunlight upon its surface liberates its impure gases, while bacteria of the useful sort are as busy as bees in



at some of our famous springs. To make sure of pure water from wells, the latter should be sunk to a great depth, and for twenty or thirty feet the walls should be rendered impervious to surface water by Portland cement.

FIG. 46.



NATURE'S BEVERAGE ON A FROLIC THROUGH THE HILLS.

Residents along the shores of muddy rivers, or drawing their supplies from such sources, are aware of the injurious properties which may be lurking in them, and often resort to rain-water for what may be needed for the table. Unfortunately, they only "jump from the frying-pan into the fire." In large cities the air above is no cleaner than the streets beneath. It is a reservoir of the animal effluvia of crowded populations. The breath of thousands of diseased men and animals mingles with the rains as they descend, infecting them with their poisonous gases. I have no doubt that, in seasons of epidemics, the seeds of the prevailing diseases are often drunk with water. Consequently, those who drink rain-water should first expose it for several days to light and air, and then to filtration. By these means it may be

almost every hygienic rule, that it has become the custom everywhere to resort to cool drinks during hot weather, and to hot drinks in cold weather. The temperature of the water taken inside, as well as that applied outside, should, as a rule, having of course its exceptions, be made to correspond with the temperature of the atmosphere. Ice water should not be taken with the meals at all, for it chills the stomach, and retards, and sometimes arrests, digestion. The colder the water, the more likely it is to do this. Nor is this all; it acts unfavorably upon those excretory vessels in the lining of the intestines which help to rid the system of waste matter.

A NOTED WRITER IN ERROR.

Dr. Felix L. Oswald, in *Health Culture*, has given publicity to some views quite antagonistic to the foregoing, and contrary to some other advice given in this volume. He claims that in partaking of a modern dinner there is "a longing for a cooling diluent," and that it is entirely right to satisfy that desire. He says Professor Orthodox "enumerates five distinct sources of peril from indulging that appetite." He quotes Dr. Sohrodt, the author of "*Natur-Heilkunde*," who holds, on the contrary, "that our diet is not half fluid enough, and demonstrates that organic warmth will soon reduce over-cold beverages to the right medium, and that a craving which nothing but fresh water will satisfy is a clear proof that the stomach is suffering from an excess of caloric and deficiency of moisture." If our food is not fluid enough that deficiency can be supplied without ice water or that which is much colder than the atmosphere, and when this can be done, it is self-evident that it is a saving to the vital energies engaged in the work of digestion to not arrest the latter, while cold water, taken into the stomach, is being brought to a sufficiently warm temperature to enable digestion to resume its work. It is an accepted fact by the medical profession that a temperature of "98° to 100° Fahrenheit is requisite for the perfect action of the gastric juice." It was observed by the experiments of Dr. Beaumont, on Alexis St. Martin, who received a wound in his stomach permitting the former to watch the effects of certain foods and fluids entering that organ, that cold water produced turgidity of the lining of the stomach, and that it retarded the digestive processes. A further objection to the use of much water, warm or cold, while eating, is that a rapid eater is enabled to "wash down his food" instead of taking the first step in the digestive process by freely mixing it with the salivary secretions. And considering the "hustling" propensities of the Americans, this objection is not to be lightly considered.

Again, Dr. Oswald gives the following, to my mind, erroneous teaching. He says: "The danger-of-cold-drinks-in-warm-weather

substance. A mouthful of distilled water, taken by inadvertence, will be spit out regularly. \* \* \* The local poisonous effect of distilled water makes itself known by \* \* \* all the symptoms of a catarrh of the stomach on a small scale.

"The harmfulness of the process, so much resorted to to-day, of washing out the stomach with distilled water, is acknowledged, and we find the physicians who formerly used that agent are now turning to the 'physiological solution of cooking salt,' or 'water with a little salt,' or the mineral waters recommended for the purpose. The poisonous nature of absolutely pure water would surely have been recognized and felt long since, were it not that its effects, in their most marked form, can seldom occur, for through a train of circumstances, 'absolutely pure' water can rarely be found. The ordinary distilled water, even when freshly distilled, is not really absolutely pure, while that used in the laboratories and clinics is generally stale, has been kept standing in open vessels, generally in rooms where chemicals of every sort abound and whose gases and effluvia are taken up by the water."

If, therefore, the process of distillation be resorted to for the purpose of removing its more objectionable impurities, it should be allowed to stand for several hours in a healthful atmosphere to recover those properties which are essential to render it healthful.

The well-water of limestone countries is productive of gravel and kidney difficulties, and causes the hair to become prematurely gray, while in all new countries it is often rendered unwholesome from the drainage of decayed vegetation. The former is known by its hardness, and the latter by its peculiar odor, and frequent discoloration. Water which has been standing long in one's room is unfit to drink. It has absorbed the perspired and respired gases, and the colder the water the more completely has it effected this. The disinfectant qualities of water by the absorption of deleterious gases are so well known to intelligent people, that many keep vessels of water standing in their sitting or lodging rooms. Water which has remained all night in leaden pipes becomes affected with the properties of the lead, and that which remains for a long time in a pump, with the impure gases of the atmosphere; and in both cases should be drawn off before any is taken for drinking purposes. Leaden pipes are chiefly used in cities for conveying aqueduct water into the houses, and too much care cannot be taken, when no water has been drawn through the night, to avoid taking any that may have stood in the pipes during the interval.

In summer, ice water should be used with great caution, for if drunk excessively, it causes irritations, and sometimes fatal inflammations of the stomach and bowels. I am satisfied that correct habits in drinking would require the use of warm drinks in summer and cold drinks in winter. It is undoubtedly owing to our tendency to invert

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I find myself obliged to treat his doctrine regarding cold drinks with the same contempt he pours out upon the "grannies of anti-naturalism" in the extract quoted. Moreover, the "grannies" in the profession will outnumber him ten to one in dealing with this exceedingly important matter. Moderate indulgence in water of the temperature of that taken from a spring or well, while dining or when perspiring, may prove harmless. Warm drinks at such times are still better.

FIG. 47.



SOME OF THE DENIZENS OF A POND OF WATER.

### THE TRUE VALUE OF WATER.

A liberal supply of water at proper times is useful in every way ; first, to favor solution and assimilation ; and, lastly, to favor the action of all the processes of elimination and to modify the acidity of the excretions. While it constitutes some part of all the foods we are accustomed to eat, we are likely to need some of the pure article in addition to what we get in ordinary foods ; and the more concentrated our foods, the more the necessity for extra water, while those eating largely of succulent vegetables and fruits get about ninety per cent. of water therein, and may not need any extra as drink.

When one can be sure of a sufficient supply of good water, its very free use, externally and internally, at proper times, as before remarked, conduces to good health. In the human system water keeps things moving. In the plumbing of a house the use of a great deal of water, flushing the pipes, is regarded as of more value than disinfectants, and so in the plumbing of the human system it is a good idea to keep the



pipes well flushed. It certainly helps elimination through the skin, the lungs, the bowels and kidneys, and every drop of water which is vaporized with the breath, or issues through the skin, or is excreted from the kidneys, takes along with it waste matters that the system is well rid of. In the *Lancet* it was once written: "As a matter of fact and experience, those who drink innocuous and unstimulating fluids freely do not suffer from kidney trouble, but are almost uniformly healthy, at least so far as these excreting functions are concerned. Those who do not recognize the fact that three-fourths, by weight, of the entire human organism is entirely composed of fluids, cannot fully realize the great needs which exist for a copious supply. The excrementitious product, uric acid, requires not less than some eight thousand times its bulk of water to hold it in solution, and if it be not dissolved it rapidly crystallizes with more or less disastrous consequences, as in acute gravel and in other less well recognized troubles."

Water gives mobility to the fluids, dissolves and carries in solution the various substances intended for nutrition or destined for excretion. It supplies rotundity and flexibility to the body as a whole; strength and elasticity to the muscles, bones, ligaments, and cartilages; through its agency exchange of matter and tissue metabolism is effected. In short, we repeat, it is only by the presence of water in proper proportion in all the tissues and fluids of the body that the physiological phenomena which characterize health can take place.

The United States are becoming noted for their mineral waters. The sulphur and other springs of Virginia have been the resorts of the sick for many generations. The springs of Saratoga enjoy an enviable reputation, not only in this country, but in Europe. Those of Avon are favorites with many, and the Poland Springs of Maine are noted for their absolute purity. There are other springs of more or less note in various parts of our country, all of which possess some merit as remedies for disease. The fact that most of them are medicinal, should lead to reasonable caution in their use. The visitors to these springs generally seem to imagine that the more of these waters they can "worry down" in the course of a day, the more rapidly will they recover from some difficulty with which they are affected. With this excess, and in many cases the possible inadaptation of a certain water to the constitutional peculiarities of the patient, injuries instead of benefits are experienced. The advice of resident physicians should in all cases be obtained, as their observation in the use of these waters enables them to give directions which will the more likely insure success in their employment.

It may be thought that I am inconsistent in thus speaking favorably of mineral waters, by those who have read my essay on vegetable medicines. In that place I denounce mineral medication, but every

rule has its exceptions, and I cannot but make an exception in favor of these remedies, "distilled as they are from the bowels of the earth by the hand of Omnipotence;" for analysis of most of those in favor shows no mineral or salt that is actually foreign to the tissues or fluids of the human body. Some are, however, pretty strong doses, only occasionally useful to effect a quick evacuation of the inner man, by a washing down and out process; and I would not be understood as intimating that all mineral waters must be useful because "mother earth" provides them. This sort of superstition should need exposing rather than encouraging, for, in fact, nature compounds many a solution that can serve no good purpose in the human economy.

Mineral waters are manufactured, and some of them pretty good imitations, but as well might the artificial flower maker essay to manufacture a natural rosebud, with its rich colors and delightful fragrance, as for the chemist to attempt to prepare a perfect imitation of any of our best mineral springs.

IN CONCLUDING the Essays on "The Food we Eat" and "The Liquids we Drink," we may well express surprise that anybody born into this world lives to exceed ten or a dozen years. To live until fifty is a great achievement, and to cling to the vital spark until eighty or one hundred seems like a miracle! With trichinae in our pork, tuberculous bacilli in our meat, ptomaines and other impurities in our milk, toadstools simulating mushrooms growing in our fields, careless use of antiseptic chemicals in our canned foods, typhoid bacteria in our bivalves and in our drinking-water, and the possibility of our vermiform appendix slyly pocketing a stray seed, we seem to be beset with perils. But, on the other hand, we are favored with providential sentinels and protectors. With eyes to inspect; the olfactory nerves to smell and taste; the sense of feeling, to report when anything acrid or irritating is passing the entrance to the oesophagus; the extremely acidulous gastric juices in the stomach to burn up living germs; and the stalwart gendarme we call the liver, at the delivery gate of the portal system, ready to gather in all the mischief-makers before they can enter the general circulation, all of us who are truly alive in every inch of our being manage to eke out a tolerably happy existence extending over a term of fifty, eighty, or one hundred years! But the puny, devitalized, thin, or inapure blooded, the careless and the reckless, have to succumb! This view is well sustained by the report of the United States Consul at Sivas, Turkey. This city is located about five thousand feet above sea-level, and farther up the mountain is a village pouring all its sewage into a river which supplies the people of Sivas with water. This water flows through open ditches in which the denizens bathe, wash their clothing and dirty rugs, and still it is used for drinking

without boiling or filtration. Cholera broke out in that upper village, and strange to say, "only twelve per cent. of the population of Sivas contracted the disease, and only one-fourth of these died." The *Sanitary Inspector* adds: "This indicates that a *majority of the people were not susceptible to the infection.*" That is it exactly, and illustrates the necessity of keeping all the vital processes in healthy activity. The Turks are a hardy race, and can endure a great deal while living carelessly. But we are not made up in that way in America, and we must employ the means science has supplied to protect ourselves. If we will do our part, the sentinels presiding over our vital organs will do the rest. The latter will conduct us through all kinds of perils if we will preserve strength of nerve and purity of blood.

### The Atmosphere we Live in.

It is estimated that each individual takes into his lungs annually about 800 pounds of air, and if the reader has observed in the preceding essays the amount of food and drink consumed every year by one person, it will be discovered that the aggregate amount of air, liquid, and substantial food received per year, by only one member of the human family, amounts in the aggregate to about one and one-half tons.

The value of the air in nourishing the human system may be in a measure appreciated, when we consider what it may do in promoting the growth of a tree. Read the following narrative of an experiment and the comments of the narrator: "Two hundred pounds of earth were dried in an oven, and afterward put into a large earthen vessel; the earth was then moistened with rain-water, and a willow-tree, weighing five pounds, was placed therein. During the space of five years, the earth was carefully watered with rain-water or pure water. The willow grew and flourished, and to prevent the earth from being mixed with fresh earth, or being blown upon it by the winds, it was covered with a metal plate full of minute holes, which would exclude all but air from getting access to the earth below it. After growing in the earth for five years, the tree was removed, and on being weighed, was found to have gained 165 pounds, as it now weighed 170 pounds, and this estimate did not include the weight of the leaves, or dead branches, which in five years fell from the tree. Now came the application of a test. Was this all obtained from the earth? It had not sensibly diminished, but in order to make the experiment conclusive,

FIG. 42.



OUR PLANET, AND ITS SURROUNDING ATMOSPHERE.



It was again dried in an oven and put in the balance. Astounding was the result ; the earth weighed only two ounces less than it did when the willow was planted in it ! Yet, the tree had gained 165 pounds. Manifestly, then, the wood thus gained in this space of time was not obtained from the earth ; we are, therefore, compelled to repeat our question, 'where did the wood come from ?' We are left with only two alternatives—the water with which it was refreshed, or the air in which it lived. It can be clearly shown that it was not due to the water ; we are consequently unable to resist the wonderful conclusion—it was derived from the air." An English physician has very aptly called air "gaseous food."

If air can make a tree, it can make or unmake man, according to its quality, for the lungs of the former (its leaves) are not so perfectly constructed for respiration as those of the latter ; nor is its bark so pervious to the air as the skin which envelops the human body ; and before the conclusion of this essay, I shall show to the reader that many derangements of the blood and nervous system arise from impure air.

As my views with regard to the influence of air upon the human system are somewhat peculiar, and a proper understanding of them necessary to aid the reader in readily comprehending many important points in subsequent pages of this work, I shall subserve both the purposes of this chapter, and many which are to follow, by a general treatise on the nature and effects of this wonderful element.

Scientists used to say that the air was composed of nitrogen, oxygen, and carbonic-acid gas ; but new gases have been from time to time discovered, and at the present time they may be given entire, as follows: Oxygen, nitrogen, argon, krypton, neon, metargon, and etherion. M. de Parville well says : "This atmosphere of ours is positively a box full of surprises !" Etherion is the discovery of Professor Charles F. Brush, the noted inventor, chemist, and electrician of our own country, and he ventures the conjecture that "etherion will be found to consist of three or more gases forming one or more periodic groups of new elements, all very much lighter than hydrogen," and he proposes, if this conjecture proves true, "to retain the present name for the lightest one." Unless mistaken in certain premises, in an address before the American Association for the Advancement of Science, he believes "that it extends far beyond the atmosphere of the earth, indicating the possibility of an interplanetary and interstellar atmosphere." In addition to the gases named, "carbonic acid, ammonia, free nitric acid, and certain organic substances are present in very small proportions as impurities," together with more or less vapor of water, according to the temperature. Then, just as heat or cold, or light or darkness, may pervade the atmosphere, electricity in varying volume

and influence may be present therein. It is only on cloudy, wet, or rainy days that telegraphic operators suffer much inconvenience from atmospheric electricity, and when such weather prevails they are sometimes knocked down by currents gathered from the atmosphere. Frequently they are compelled to suspend operations during a thunder-storm. At least this used to be the case until electricians devised means for self-protection. Then, too, does not the lurid lightning, with its voice of

FIG. 49.



THE ELECTRICITY OF THE THUNDER-STORM.

thunder, often tell us of the greater presence of electricity when the sky is cloudy and the air loaded with vapor? Victor Hugo, in describing an equinoctial storm, says: "The magnetic intensity manifests itself by what might be called a fiery humor in the sea. Fire issues from the waves; electric air—phosphoric water. The sailors feel a strange lassitude. This time is particularly perilous for iron vessels; their hulls are then liable to produce variations of the compass, leading them to destruction. The steamer Iowa perished from this cause." When this undue presence of positive electricity exists, there are, undoubtedly, currents of negative electricity moving about to some extent, and it is

the approach of positive and negative currents toward each other which causes the lightning flash and the atmospheric concussion which conveys to the ear the sound of thunder. But if the atmosphere, as a whole, were more negative, positive currents would not traverse the telegraphic wires, but would be absorbed or taken up instead of moving in accumulated bodies toward the operator's instruments; and if the air near the earth's surface were all negative, and that far above it all positive, then would occur a constant equalization, or blending of the two opposite forces without the violent hurling of lightning balls, whose movements are observed and mutterings heard during a thunder-storm.

#### ELECTRICAL RADIATION.

I, therefore, offer the proposition, that the air in dry and pleasant weather usually possesses the electrical element to a wholesome extent, while during wet and rainy weather it contains an excess. When the weather is fair, the human system is relatively in a positive, and the air in a negative, condition; that is, the former possesses more electricity than the latter. The result produced by this disparity between the body and the element which surrounds it, is a constant *radiation* from the former, or, in other words, a continual flowing off of the electrical element into the atmosphere as represented in Fig. 50. It is well known to physiologists that when the pores of the skin are in a healthy condition, there is an incessant discharge from the skin of what is termed insensible perspiration; but nothing is said of the motive power by which the effete particles of the system are thus so wonderfully carried off. Now, if a doctor should retire at night with his garden strewn with filth and rubbish, and on arising in the morning should find the whole mass emptied into the street, he would naturally enough inquire who or what had removed it. Surely dead and waste matter could not remove itself. Strange it is, then, that the astute professors of anatomy and physiology have never thought to ask themselves how the corrupt particles of the system, day by day and year by year, during the natural life of man, are emptied into the great thoroughfare of life—atmospheric air. The pores possess no power in themselves to throw them off, and if, by the act of contraction, they should succeed in expelling these impurities, with no motive power to carry them away from the skin, the latter would daily become coated with the diseased exudations of the body. There are about seven millions of pores in the human body, and the quantity of useless matter that is daily discharged from them amounts to from *twenty to forty* ounces. The reader can see, therefore, how soon the avenues of the skin would close up, were the discharge of effete matter produced by merely a contracting process of the pores. Nature has manifestly employed a motive power, and this

agent is the same which the mind of man uses in controlling his muscular organization, and the same, too, that moves and sustains the planetary systems of innumerable worlds.

It is found in cases of fever that the blood is overcharged with acid, and the fever is undoubtedly, in a measure, due to the presence of this. This excess may be easily explained. The excretions from the skin are acidulous, showing that electrical radiation, when active, relieves the blood and system generally of all excessive acidulous accumulations, as well as waste matters. But

when the pores of the skin are closed up by sudden exposure to cold, or taking cold, or the radiation is more sluggish by protracted wet weather, or a residence in a damp location, the acidulous and effete properties of the blood and tissues do not pass off sufficiently, and the system becomes loaded with them, inducing fever or other inflammatory difficulties, and even sunstroke, as will be observed a little farther on. Here we have physiological evidence of a too positive condition of the atmosphere in wet weather. The system, no longer electrically positive in its relation to the surrounding air, active, healthful radiation of electricity, with its loads of impurities, is partially or wholly suspended. It is

under the influence of these conditions that rheumatic and neuralgic invalids complain of increased pain, because the damming up of the impurities of the system promotes the accretions of acrimonious particles of matter which attach themselves to the living tissue and inflame it. The application of galvanism, or electricity, while this state of things exists, not only tends to detach the irritating particles from the parts to which they have adhered, but also has a tendency to throw the body into a positive condition, or in other words, to render it more electrified than the atmosphere, so that radiation of the impurities is partially resumed. No one feels as well on a rainy day, or living in a

FIG. 50.



ELECTRICAL RADIATION.

damp location, excepting those whose electrical conditions are abnormal, or whose fluids radiate too much to the surface, leaving the mucous membranes dry. Such, of course, feel better when the air is moist, and more strongly electrical, while catarrhal invalids, or those having excessive mucous secretions of any kind, are made worse thereby.

As a rule, having few exceptions, then, pleasant weather and dry locations are most conducive to health, because these conditions and circumstances promote the relative electrical condition between the body and its surrounding element, and are best calculated to keep healthfully active the *electrical radiation* which carries off the *rubbiak* of those portions of the system not easily relieved by other depurating organs. The doctrine of electrical radiation first propounded in my "Medical Common Sense," in 1857-58, has never been refuted, while scientific discovery in the fields of electricity and photography is tending more and more to confirm its absolute correctness. There is good reason to believe it will some day be universally accepted.

There are other reasons why the air is not as wholesome in wet as in dry weather. When the latter prevails, the density of the air causes a rapid passing off of earthy, vegetable, and animal impurities which, owing to their vapory form, rise with such rapidity as to scarcely affect the air we breathe. But when it rains, or when the atmosphere is unusually humid, the air being lighter, the gases of decaying vegetation and animal effluvia (which are also light) mingle with the air we breathe. Some writer, whose name for the moment escapes my memory, has attributed sunstroke to the confinement within the body of effete matters which should escape with the insensible perspiration. Such attacks usually occur when there is great humidity as well as intense heat, and he believed the blood became poisoned by the retained impurities dammed up in the system, which is certainly quite reasonable, but I would add that such a tendency would be materially assisted by the impure gases one is taking into his lungs when the air is loaded with moisture.

Thus, both the internal and external conditions would be such as to cause blood poisoning, and the disease we call sunstroke. That the latter results from blood poisoning seems especially plausible when we take into account the function of the perspiratory glands underlying the skin, and these glands, as heretofore remarked, are wonderfully numerous. The function of the skin is related to that of the kidneys. In some of the lower forms of life there are no such organs as kidneys. The skin performs the entire work of eliminating the fluids. In the higher and more complex forms, the kidneys are added to do this work more thoroughly, and the importance of this function is evidenced by the fact that when there is any obstruction to the free passage of the urine, the blood becomes poisoned with urea. When, therefore, it is



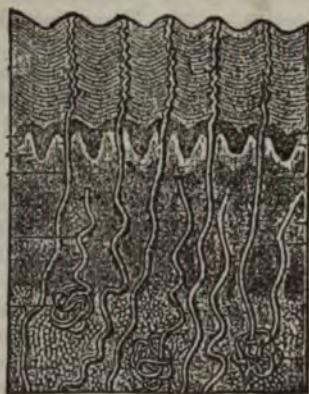
considered that some thirty or forty ounces of effete matters escape from the skin in its normal condition every day, it can be seen what mischief must necessarily ensue when, because of unusual heat and humidity in the atmosphere, the process of electrical radiation is reversed, and all the impurities are carried into, instead of out of, the human body. Sunstroke, which is hardly known in regions noted for the dryness of the atmosphere, is unquestionably caused by blood poisoning induced by this reversal of the important function of the skin, and while the victim thereto is suffering from this condition, the trouble is still further aggravated by the fact that the lungs do not receive from the moist air taken with each inspiration, pregnant as it is with the impure gases with which it is tainted, the vital elements the system requires.

## ERRONEOUS PHILOSOPHY CORRECTED.

A popular writer, who has said a great many good things, erroneously remarks as follows: "The amount of exhalation and effluvia which rises from the ground, depends much upon the atmospheric pressure. When the air is heavy, these substances are, as it were, confined to their sources, that is, they are liberated at the slowest rate; but as the barometer falls, the pressure is taken off, and the miasmatic emanations rise much more rapidly."

A more palpable error was never uttered. It is contrary to the laws of gravitation. Investigate it in any way you choose, and you will find it wrong. If you suppose the miasmatic emanations *heavier* than air, they remain near the ground in consequence of their own *weight*. Suppose them *lighter*, and it is impossible for them to be held down by the *pressure* of the air, for the latter will then settle down under them, and *raise them up*. Who ever heard of putting a flat stone on water to hold it down? No, the quotation is absurd and contrary to fact. Miasmatic emanations are lighter than air on a clear day, and rapidly rise above the stratum of air we breathe; but on damp and wet days, when the air is also light, miasmatic emanations rise sluggishly, and mix with the air we breathe. From this it appears that Nature

FIG. 51.



SWEAT-GLANDS

From the palm of the hand. The coiled glands in the deeper parts are not shown.

sometimes disturbs one of the chief elements of life, a fact which rather disproves the writings of some people who assert that there is no reason why a person may not live on earth forever, if he strictly observes the laws of life and health. It is well enough to say that few people live as long as they might, for that is *true*; and I shall now proceed to treat upon matters relevant to this subject, which go to prove the fact. The atmospheric changes and conditions which we have thus far been contemplating, are not within the control of man.

If pains were taken to preserve the purity of the air we breathe, so far as it is within our power, health would be promoted and longevity increased. The venous blood which enters the lungs is in a negative state, and depends upon the oxygen or electricity of air to electrify it, remove its carbon, and perfect its arterialization. Hence, the air we inhale may contain its natural constituents in their due proportions, but that which we exhale contains almost the usual quantity of nitrogen, with eight or nine per cent. of its oxygen replaced with an equal amount of carbonic acid. The stomach, in the digestion of food, cannot produce all the electricity necessary to move the animal machinery, and therefore the lungs, with their curious mechanism, receive the blood from the venous system, and expose it to the electrifying influence of the atmosphere. I may be asked why the blood is not like the body, electrically *positive* in relation to the air. I reply, that it is when it leaves the lungs chemically changed by its contact with oxygen; but in passing through the arterial and capillary systems, it distributes its electrical properties and returns through the venous system destitute of that element. Respiration is really governed by electrical laws in a measure, although mostly produced by the movements of the diaphragm, and contractions and relaxations of the walls of the air-vesicles. Inflation is aided by the attraction the negative venous blood has for the electrical elements of the atmosphere, and exhalation, after the vesicles have expelled the air which has been used into the bronchial tubes, is aided by the attraction existing between the negative properties of the latter and the more positive properties of the former.

The lungs are very generous to the stomach. They keep up a necessary supply of electricity during the hours of sleep, when the digestive organs are permitted to take partial repose. Did ever the reader notice what long, deep inhalations a person takes while sleeping? While the stomach is enjoying rest, the lungs work their utmost to keep up a supply of vital electricity, and although they exhale the useless gases with the same rapidity that they do when the individual is awake, they draw in deeper and more copious draughts of the electrifying element. The stomach being on such amicable terms with the respiratory apparatus, and having made such excellent arrangements with it to aid in doing its work during the hours of partial repose (for



the stomach never sleeps soundly), the reader can see how wrong it is for him to give his stomach a big job of work to do on going to bed by eating a late supper, and that he has no right to complain if the digestive organs refuse to do it, but allow the food to ferment, and fill his blood and brain with inflammation. When the stomach has such perfect confidence in the integrity and industry of the lungs, it is also wrong to oblige the latter to cheat the former by going to sleep in badly ventilated rooms, or where malaria exists, by which the blood becomes poisoned instead of arterialized, and the stomach finds its work not only undone, but itself disqualified in a measure to resume its labors. Facts go to prove that there is a greater proneness to disease during sleep than in the waking state. In Turkey and Hindostan, if a person falls asleep in the neighborhood of a poppy field, over which the wind is blowing toward him, he is liable to "sleep the sleep which knows no waking." The peasants of Italy, who fall asleep in the neighborhood of the Pontine marshes, are invariably smitten with fever. Even travellers who pass the night in the Campagna du Roma invariably become more or less affected with the noxious air. Commercial men often conduct their business affairs in unwholesome locations in cities, but maintain a fair degree of health by having their residences, and sleeping, in healthful neighborhoods. The man whose business calls him into marshes and swamps during portions of the day, and sleeps upon the hill-top, may avoid chills and fever, with which the inhabitants who lodge in proximity to those marshes are affected.

The reason of this, after what has been said, must be obvious. The stomach battery having partially suspended operations in sleep, the lungs redouble their efforts to inhale the life-giving properties of the atmosphere. In malarious or unwholesome localities they unfortunately receive them most poisonously adulterated, and the various organs of the system, if not murdered in their slumbers, awaken to find themselves invaded by a destructive foe. An English traveller in Abyssinia has asserted that he could live in health in that sickly climate by a proper selection of the situation where he slept every night.

All this argues the deleterious effects of late suppers, as well as the necessity of well-ventilated and healthful sleeping apartments, and people who complain of ennui and ill health while they persist in the former, and take no pains to secure the latter, are as foolish as the boy who thrust his hand into hot embers and then cried because it was burned. Let those who sleep in small rooms, with windows and doors closed, remember that every individual breathes, on an average, from thirteen to twenty times per minute, and inhales from thirteen to forty cubic inches of air at each inspiration. Now take as a low estimate the consumption of air at twenty inches, and the number of inspirations at fifteen, and we find that in the space of one minute

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300 cubic inches (some authorities say 500) of air are required for the respiration of one person, during which twenty-four cubic inches of oxygen are absorbed by the blood, and the same amount of carbonic acid given out. Proceed with this estimate, and we find that in one hour one pair of lungs have consumed 1,440 cubic inches of oxygen, and in seven hours, the time usually allotted to sleep, 10,080 cubic inches of oxygen have been replaced with an equal quantity of carbonic acid. The deadly effects of the latter are illustrated by the fact that a canary bird, suspended near the top of a curtained bedstead where persons are sleeping, will almost invariably be found dead in the morning. It has further been demonstrated that when there is six per cent. of carbonic acid in the air, it is rendered unfit for the support of animal life, and half this proportion would put out the light of a candle. In view of these facts, how many churches, school-houses, places of amusement, factories, workshops, and dwelling-houses are but the nurseries of disease. Nor is it surprising that a great majority of tombstones in our cemeteries are inscribed with ages below twoscore.

### PROPER MANAGEMENT IN COLD WEATHER.

For sleeping-rooms it is doubtful if, in all cases, it is well to have wide open windows during the hours of sleep. Dr. Hall, a well-known writer about thirty years ago, in his *Journal of Health*, said: "Robust persons may safely sleep in a temperature of 40° or under, but the old, the infant, and the frail, should never sleep in a room where the atmosphere is much under 50° Fahrenheit." The Oneida Community at that time took the hint and tested the doctrine. It seems that the young and the old, as well as those who were not physically strong, had been much subject to coughs, colds, catarrhs, etc., under the practice of sleeping with open windows. In building anew for the housing of a community composing about 200 persons, they provided for a plenty of ventiducts and other improvements for maintaining the purity of the air, and they decided that they found a confirmation of Dr. Hall's doctrine, according to which "to lie still in bed with nothing to promote the circulation, and breathe for hours an atmosphere of forty and even fifty degrees, when the lungs are at ninety-eight, is too great a change. Many persons wake up in the morning with inflammation of the lungs who went to bed well, and are surprised that this should be the case. The cause may often be found in sleeping in a room the window of which has been incautiously hoisted for ventilation. The water-cure journals of the country have done an incalculable injury by the blind and indiscriminate advice of hoisting the window at night. The rule should be, everywhere during the part of the year when fires are kept burning, to avoid hoisting outside windows. It is safer and better to leave the chamber-door open, as also the fire-place—then there

is a draft up the chimney, while the room is not so likely to become cold. If there is some fire in the room all night the window may be opened an inch. It is safer to sleep in bad air all night with a temperature over fifty, than in a pure air with a temperature under forty. The bad air may sicken you, but cannot kill you ; the cold air can and does kill very often." A good-sized sleeping apartment, if kept well open during the day, will be in good condition at night to sleep in with closed windows. Small rooms should in some way provide for the ingress of fresh air, but an open window, unless the sleeper be unusually robust, is not the hygienic thing.

#### IMPORTANCE OF CAREFUL VENTILATION.

Some physiological writers have said that scrofula is often *produced* by bad air. That it is rendered contagious through the medium of the air is certain, but I am hardly inclined to believe that the disease would directly arise from breathing the atmosphere of a crowded room unless there were persons in the apartment affected with it. Scrofula and all diseases are rendered, in a measure, contagious by the diseased animal vapors from the lungs and pores of persons affected with them. These vapors mingle with the natural ingredients of air in a confined room, and are conveyed to the blood of others through the respiratory apparatus, and hence, impure air may, in one sense, be said to produce scrofula. Certain it is, that it will convey the disease to those not affected with it, if it is rendered impure by the presence of scrofulous persons. Every man and woman is constantly perspiring or radiating from the skin, and exhaling from the lungs, waste animal matter, and if a person is diseased, these vapors partake of the nature of that disease.

Inasmuch, then, as there are at least five diseased persons to every ten sound ones in every community, the reader can see how liable he is to contract disease in a crowded lecture or show room. The best ventilation does not render us entirely safe, but improper ventilation makes the spread of disease positively certain. Professor Faraday gave his experience regarding the atmosphere of crowded rooms, as follows :

"Air feels unpleasant in the breathing cavities, including the mouth and nostrils, not merely from the absence of oxygen, the presence of carbonic acid, or the elevation of the temperature, *but from other causes depending on matters communicated to it from the human being*. I think an individual may find a decided difference in his feelings when making part of a large company, from what he does when one of a small number of persons, and yet the thermometer give the same indication. When I am one of a large number of persons, I feel an oppressive sensation of closeness, notwithstanding the temperature may be about 60° or 65°, which I do not feel in a small company at the same temperature, and which I cannot refer altogether to the absorption

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of oxygen, or the exhalation of carbonic acid, and probably *depends upon the effluvia from the many present*; but with me it is much diminished by a lowering of the temperature, and the sensations become more like those occurring in a small company."

If mankind were generally aware of the effects of the diseased radiations and exhalations of invalids, popular lecturers and preachers, and favorite dramatists and operatic singers, could hardly induce the convocation of the crowded audiences that they now do, and people would be as particular in the air they breathe as in the water they drink. The use of stagnant waters could not be more deleterious to the nervous and vascular systems than the inhalation and absorption of vitiated air. Still, most people are regardless of the latter, while they throw out with disgust a glass of water which has odor, sediment, or color. And how many fastidious men and women would suffer almost any punishment rather than go in bathing in a bathing-house crowded with all sorts of people as thick as they can stand or swim. They would consider the water unfit to enter, and so with reason they might think, but these same persons do not seem to imagine when in a crowded and even odorous car, omnibus, or lecture-room, that they are in fact bathing in the same air with all the individuals they are crowded with, and not only that, but breathing it, too. Your clothing does not protect your skin from the effluvia passing off from the besotted and tobacco-saturated man who sits against you on one side, nor your veil from breathing the same air which has been inhaled and exhaled by the woman with decayed teeth, catarrh, and bad breath on the other side. Men returning from their business, and women from shopping, do not seem to realize that they bring home with them in their parlors some of the essential parts of men and women whom they would not allow to enter their back doors. This is no fling at poor people, but at those whose habits and dissipations have rendered them not only filthy, but diseased. It is, indeed, amusing sometimes to see how an aristocratic individual will turn his or her back upon, or leave a seat contiguous to, some plainly dressed person, though the latter be glowing with health, and seek contiguity with quite an opposite character, whose countenance bears every evidence of disease, but whose physical infirmities are almost concealed by the tailor, or dressmaker, and the perfumer. Better at any time seat yourself in public vehicles beside men whose clothes are soiled with honest labor, but whose skins are red with the glow of health, or next to women in plain, cheap calico, with vivacity in their eyes, and sweetness in their breath, than to haughtily squeeze yourself between two well-dressed invalids. The former impart to you the magnetism of health, while the latter absorb your vital magnetism, and corrupt the air about you. By one, your stock in health is enriched; by the other, it is impoverished. Fish swim in water—you swim in

air ; look out for its purity. And parents, have an eye to your children, who rely upon your judgment and care. Horace Mann, alluding to ill-ventilated school-rooms, said : "To put children on a limited supply of fresh air is as foolish as it would have been for Noah during the Deluge to put his family on a short allowance of water. Since God has poured out an atmosphere of fifty miles deep, it is enough to make a miser weep to see our children stinted in breathing."

As for the great body of animal effluvia poured into the atmosphere by our numerous and sickly human family, Nature has provided a neutralizer. The electrical scintillations which are often observed on warm evenings, and the more powerful currents which rend the atmosphere during a thunder-storm, produce an element called ozone, and this neutralizes those properties in the atmosphere the accumulation of which in time would destroy animal life. All have observed how refreshing the air is after a thunder-storm. Not only has the air returned to a healthful electrical condition, but it has become permeated with vitalizing ozone. A few hours before it was stagnant and debilitating ; your skin was relaxed and gluey to the touch ; you felt languid and spiritless, but now you feel as refreshed as a child from a bath. This change has been produced by ozone. If the air be deprived of it for a great length of time, sickness becomes prevalent, particularly that which is characterized by fevers ; and epidemics, if present, rage with fearful fatality. Thus, when Nature has provided an element for disinfecting the great body of the atmosphere which surrounds our planet, and arresting the spread of pestilence, each individual should put forth some personal effort to preserve the purity of the air which immediately surrounds himself, and to protect the helpless and inexperienced from unnecessary exposure to diseased effluvia and poisonous miasma.

#### OUR METHODS OF HEATING.

The introduction of stoves for heat has been as injurious to health as it has been universal. Air to be healthful must possess a certain amount of moisture (which is more electrical than dry air), to prevent a too copious radiation of the electrical elements and fluids of the body. The effect of stove heat, as everyone knows, is to render the atmosphere dry. But if this were the only objection to the use of stoves, some means might be devised to overcome it. Says Professor Youmans : "While in point of economy stoves are most advantageous sources of heat, yet in their effects upon the air they are perhaps the worst. We saw that in the stoves called *air-tight*, the burning is carried on in such a way that peculiar gaseous products are generated. These are liable to leak through the crevices and joinings into the room. Carbonic oxide gas is formed under these circumstances, and recent

experiments have shown that it is a much more deadly poison than carbonic acid. A slow, half-smothered burning of these stoves requires a feeble draught which does not favor the rapid removal of injurious fumes. Besides, carbonic acid being about half as heavy again as common air, must be heated  $250^{\circ}$  above the surrounding medium to become equally light, and still higher before it will ascend the pipe or flue. If the combustion of the fuel is not vivid, and the draught brisk, there will be regurgitation of this gaseous poison into the apartments."

FIG. 52.



YE OLD-FASHIONED FIRE-PLACE IN YE OLDEN TIME.

The same writer continues: "Probably all stoves, from their improper fittings, are liable to this bad result. Hot-air furnaces also have the same defect. They are cast in many pieces, and however perfect the joinings may be at first, they cannot long be kept air-tight in consequence of the unequal contraction and expansion of the different parts under great alternations of heat. Combustion products are hence liable to mingle with the stream of air sent into the room." Dr. Ure also remarks: "I have recently performed some careful experiments upon this subject, and find that when the fuel is burning so slowly as not to



heat the iron surface above 250° or 300°, *there is a constant deflux of carbonic acid into the room.*" From recent experiments of French *savants*, it appears that cast-iron stoves are more injurious to the health than those made of sheet or wrought-iron. They say that under a certain degree of heat, cast-iron is rendered porous, or at least pervious to the passage and absorption of gases. They think they have been able to state the quantity of oxide of carbon which may transude from a given surface of metal, and have shown that the air which surrounds a stove of cast-iron is greatly impregnated with hydrogen and oxide of carbon. They also say that these cast-iron stoves absorb oxygen, thereby taking up the vital elements of the air at the same moment they are poisoning it by exhaling deleterious gases. M. Deville, at one of the sittings of the Academy of Sciences, Paris, warmly supported this view. In his lecture-room at the Sorbonne, he had placed two electric bells, which were set in motion as soon as hydrogen, or oxide of carbon was diffused in the room. During his last lecture, the two cast-iron stoves had scarcely been lighted when the bells began to ring. The credit is due to M. Carot, one of the physicians of the Hotel Dieu of Chambery, for first calling attention to this matter. The arrangements for heating houses by hot-water furnaces and steam are open to less objection than any other modern improvement. They produce a less dry warmth, and the pipes conveying the hot air or steam through the various rooms of the building are not the conductors of unwholesome gases.

To warm an apartment, there is nothing really like the old-fashioned fire-place, and all who have ever had the felicity of warming themselves before it, will join with me in this assertion. The author of this work spent his juvenile winter evenings before the light and heat of this ancient device for keeping the shins warm. A fire on the hearth does not heat the air, but as a writer truly remarks, "*the heat rays dart through it to warm any object upon which they may fall.*" The same writer continues: "The sun passes his floods of light through the atmosphere without warming it a particle. Air is made to be *breathed*, and we again discover providential wisdom in the arrangement by which the sun warms us, without disturbing in the slightest degree the respiratory medium. But if we heat the *air itself*, we at once destroy the natural equilibrium of its composition, and so change its properties, that it becomes more or less unpleasant and prejudicial to health."

Large, open grates for burning coal are good substitutes for fire-places and should take the place of stoves, not only in dwellings, but in churches, theatres, and show-rooms, where the animal effluvia of a crowded assembly are sufficient to render the air vitiated, without the further addition of stove or furnace heat; but if economy will not sanction this, then let steam be introduced through iron pipes, so arranged as to



distribute heat equally in every part of the building, and not make a volcano of fire in the basement to emit ashes and gases as well as scorched air in the apartments above.

Too much care cannot be taken for the maintenance of the natural purity of air. School-houses, churches, theatres, dwellings, and factories should be daily aired, in cold as well as hot weather. The permanency of impure air in a close building is forcibly illustrated in a recent account given in the *American Medical Gazette* of the vault of the old cathedral church of Bremen. Hundreds of years ago, when the old church was built, the plumbers occupied the vault for melting and preparing materials for the roof, and since that time its atmosphere has possessed the peculiar property of preserving from decay all bodies placed therein. That paper remarks :

"Visitors are shown eight human bodies, besides a number of cats, dogs, monkeys, birds, etc., all of which, by mere exposure to this atmosphere, have become dried and free from all offensive effluvia; resembling in appearance coarse parchment.

"The body nearest the door is that of an English major, said to have lain there one hundred and eighteen years.

"The second, that of a German student, who lost his life in a duel. The hard, dry flesh, still shows the sabre wounds on his throat and arm. His body has been here one hundred and seventy years.

"The third, that of a Swedish countess, whose body has remained free from the lot of common mortals for one hundred and forty years.

"The fourth, that of a Swedish general, who was killed in the 'Thirty Years' War,' and whose throat still exhibits the mark of the wound of which he died.

"The fifth is that of his aide-de-camp, who lost his life at the same time, by a cannon-ball striking him in the side. The destruction of the parts is plainly visible.

"The sixth is that of a workingman, who fell from the steeple of the church when near its completion—four hundred years ago—and broke his neck. Owing to this accident, the peculiar properties of the vault became known; for the body of the deceased workman was laid in this vault for a few days, and, having evinced no signs of decomposition, the singularities of the fact induced the authorities to permit it to remain, and here it has remained during all that time.

"The seventh is the body of an English lady, who died one hundred and thirty years since of a cancer on the lower jaw; the ravages of disease are still perceptible in the ulcerated flesh.

"The eighth is the body of a workingman, who has lain here for sixty years.

"In a marble sarcophagus, standing in the middle of the vault, are said to repose the mortal remains of the Swedish Chancellor, Van

Englebrechten; but they are not permitted to be exposed to public view, on account of some still surviving relative of the family.

"Each of these bodies retains to a great degree the appearance peculiar to itself in life. Thus, the Swedish General was a short, round-faced man, inclined to corpulency; his aide-de-camp was a slender, well-proportioned man, in the prime of life. As in general appearance, so also in facial expression, do these bodies differ; the parchment-like skin, though drawn tightly over the bones, still shows something of the manner in which the muscles beneath once worked.

"No other part of the church possesses this peculiar atmosphere, and we can only suppose that the entire chamber became so surcharged with lead, that it has continued ever since to give forth vapors, which, forming an antiseptic chemical compound of lead, have operated upon the cadavera exposed to its influence."

Now, this condition of the air is well enough for dead bodies, but baneful enough to live ones. Mechanics who work in metal can see from this, how prolific of diseases their workshops may become by being daily and nightly closed, as they frequently are in winter. There can be no doubt, too, that churches, closed up as they generally are, at the end of every Sabbath, retain a great deal of the diseased emanations of unhealthy visitors, which cannot be removed by a day's airing toward the end of the week when the sextons usually sweep and ventilate the buildings. Churches should, therefore, be aired immediately after, as well as just before, the day for services, and an airing every day would be still better.

Happily we may soon have canned air as well as canned foods, so that when Nature stints us, as on a humid or rainy day, or when our houses, churches, theatres, or lecture-rooms have become congested with stifled air, we can open the can and liberate a fresh supply, which will not only be refreshing, but on a close, perspiring day, cooling. "In our natural philosophies," says Professor Irwin W. Fay, "there is an axiom that the air that we breathe may not be liquefied. Well, Charles E. Tripler has proved that even that was not impossible. He has compressed 800 cubic feet of air into a cubic foot of liquid. He has subjected air to a pressure of thousands of pounds and placed it in liquid form at the bottom of an uncovered tin can." "Professor Fay," says the *New York Morning Journal*, "in his lecture, pointed to the can and said what the use of its contents might be. Liquid air might be used as cold air in houses in summer, as pure air in the sick rooms, as explosive air in bombs, as motive air in balloons. The lecturer said things that were practical, and they sounded like fairy tales!" Let us hope that scientists will ere long be able to supply us with canned air that will not require antiseptics to preserve its purity. We live in a wonderful age, full of surprises, and we may yet have fresh air on tap.

In concluding what I have to say on "The Atmosphere we Live in," let me add: Those who are struck down by the hand of disease and marvel at the *causes* of their afflictions, because, perhaps, they have been regular in their habits of eating, drinking, and sleeping, may find in this essay a solution of the secret. That it may have a happy effect upon mechanics who build houses; upholsterers who furnish them; servants and housewives who have the care of them; the artisan in the workshop; the pale-faced woman in the cotton factory; the hotel-keeper who entertains lodgers; the conductors of railways; the parson; the sexton; the dancer; street commissioners; the frequent visitors of cemeteries; and the mothers of young families, is the hope of the author.

### The Clothes we Wear.

The human being comes into the world very rudely. He not only disregards the prevailing styles of dress, but unblushingly presents

FIG. 53.



HOW WE COME INTO THE WORLD.

himself with no drapery whatever. Nature persistently adheres to her vanity, and believes that "Nature unadorned is adorned the most," and consistently therewith thrusts both male and female babies into the world without clothing. This is very immodest on the part of old dame Nature, but as she is a very old-fashioned jade, and has more good sense than popular refinement, everybody puts up with her pranks in this respect, and the young mother who would run from a stranger, well enveloped in a clean night-gown, does not attempt to run away from the

little stranger who comes to her without even a fig-leaf.

There is, however, quite a display of haste to wash the baby and dress it. If the poor little thing could be dressed comfortably, there would be no reason to complain of the proceeding, but mamma or the nurse has some extravagant notions as to beauty of figure, and instead of baby-clothes being put on to conform to the anatomical developments of the infant, it is expected that these will be made to conform to the notions of proud mamma, who calculates her baby shall be as pretty as anybody's. If the baby happens to be of the feminine gender, it is especially unfortunate in this respect, as well as in all others through life. It must have a small waist, whether made so or not, and its baby-clothes must be so pinned as to favor this conformation of figure. So, too, when the infant has grown to girlhood, her dresses must be made fashionably, and her body, by means of lacing, and other inventions,

crowded into them, and she becomes so gradually accustomed to tight-fitting garments about the waist, that when she arrives at womanhood, nobody can make her believe she dresses too tightly. One obstacle which every sensible physician has to contend with, is to convince his female patients that they dress too closely about the waist. If he have the boldness to thrust his fingers under the belt or waistband, she has the presence of mind to suddenly exhaust the air from her lungs, and then insist that "it is not too tight, Doctor." Many women are honest in believing that they do not dress too closely, simply because they have become so thoroughly used to it. Had they never been dressed unwholesomely in babyhood, and through succeeding years to adult age, and then the same dresses they are now wearing be put upon them, they would beg as piteously to be released, as if crushed beneath the ruins of a fallen building. A fractious husband could not be more inhumanly punished than to be sentenced to wear for one week his waistcoat as closely fitted to his body as his wife habitually wears the waists of her dresses. It is something it seems almost superfluous to assure the reader, that tight clothes of every description are injurious. Knit shirts, knit drawers, tight stockings, tight garters, tight boots, close-fitting vests and waists, tight night-dresses, tight shoes, tight hats and caps, all tend to obstruct the circulation of the blood, and also the electrical radiation which carries off the impurities of the system; and females suffer other injuries from compressing the waist, which will be presented in another essay, where the evils of tight lacing will be referred to.

So long have the habits of close dressing been pursued, a very large proportion of the men and women of civilized countries may be said to be "hide-bound;" that is, the pores of the skin have become closed and gummed up by the exhalations of the skin, which have not been permitted to pass off freely and naturally.

It is perfectly astounding how fashion has knocked out the brains of people in regard to dress. When we consider that there is not anything in the world so comfortable as comfort, is it not surprising that men and women will attire themselves with little or no regard to comfort during their conscious hours? Only when about to get into bed, and enter upon a season of obliviousness to all earthly woes, do they put on garments that admit of a fair degree of physical happiness; and how many fashionable women rush frantically to their chambers when they escape from society at the close of day, to relieve themselves of their uncomfortable costumes. If the "man in the moon" should be permitted to descend to this planet, entirely ignorant of the follies of the people of earth, it would be hard to make him believe that these discomforts were self-inflicted. Except for the fact the Divine mandates are seldom so religiously obeyed, he would imagine this self-tort-

ure to be decreed by Jehovah. Then the amount of fabric required for clothing a fashionable woman of civilization is truly appalling to herself if she is self-supporting, or otherwise to a husband, or father, of

FIG. 54.



LOOSE-FITTING GARMENTS OF A JAPANESE FAMILY.

slender means. Someone has suggested that the quickest way to make a fortune is to marry a fashionable young lady, and sell her clothes!

Look for a moment, too, at the bigotry of Fashion. Here sits an intelligent lady reading with surprise of the Chinese. The traveller in the narrative tells her that they wear tightly fitting wooden shoes to

make their feet small and pretty ! If she be of a sympathetic turn of mind, she is horrified, and "pities the poor things," and if she be mirthful, she laughs outright at the ridiculousness of the thing. But how about the Chinawoman ; may she not be equally surprised, horrified, or amused, when she reads of this very same lady who has been dressed tightly about the waist from infancy, to give her what is called a pretty figure ? Maybe ! Flora McFlimsy laughs at the idea that some women in barbarism wear rings in their noses, but in the very act of doing so shakes the glittering jewelry which hangs pendent from her own ears ! It is said that "a letter written more than thirty years ago, by Rev. Dr. Jackson, on the Vanity of Heathen Women, cited the fact as proof of their heathenish customs that the Karen women wore fancifully constructed bags, inclosing the hair, which they suspended from the back of their heads." Yet, this identical fashion, regarded by Dr. Jackson as one of the peculiarities of heathenism, was subsequently adopted by a majority of the women in civilized countries, and poetically called "The Waterfall !" Our aristocratic lady thinks the Indian squaw acts absurdly when she tattoos her skin to gratify the rude tastes of her warrior lover ; but she does not hesitate to use paint and powder on her own face, and sometimes lavishly. The Hindoo women used to (and perhaps now do) paint their eyelids, and the cuticle around the eyes within a given boundary, with lampblack, much to the disgust of travellers in their country ; but you may often see in Central Park fashionable women with pencilled eyebrows, blackened eyelashes, and dark lines drawn under their eyes, to impart (as they think) brilliancy to the eyes ! Much of this criticism, I admit, does not apply to dress, but it does to the toilet, and it is presented here for the purpose of making the fair reader more tolerant of other, and perhaps more sensible, people's tastes.

#### NOT ROBUST ENOUGH FOR BLOOMERS.

Thousands of sensible women would adopt what is called the "American," or "Bloomer Costume," were it not for the bigotry of fashion. They do not feel strong enough to face the ridicule of those who make themselves more ridiculous by trailing long dresses. It is a pity that women who are conscious of the comfort, and greater healthfulness of the reformed costume, cannot be more independent, and those who are not, more tolerant. It is a pity that men who originally practised an act of robbery on women by usurping a comfortable style of dress, should not encourage the latter in reforming their costume. Perhaps the reader does not know that the women formerly "wore the breeches." A young Belgian writer—Miss Webber—has demonstrated that "the nether garment was first worn in a bifurcated form by the *women* of ancient Judah—that the claim which man so pertinaciously

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wearing weights and false hair on their heads, cramping their feet and exposing their lower limbs insufficiently clad to the vicissitudes of climate; when they are intelligent enough to see, and alive enough to

FIG. 55.



AMELIA BLOOMER IN HER ORIGINAL COSTUME OF 1851, CONTRASTED WITH THE MODERN BLOOMERS OF 1890.

feel, the degradation of sweeping all the microbes and filth of the pavement with their long skirts, it is safe to say there will be such another revolt from the prevailing methods of feminine attire as will prove, in right down earnest, that women have developed a future race worthy to live in that better world that we are now engaged in manufacturing here below."



Artistic ideals now require both beauty and fitness in dress, and the coming reform costumes promise better to fulfil both demands than the earlier inventions in bloomers, as in daily evidence among lady bicycle riders. Our artist, however, in depicting the great change has hardly done justice to Mrs. Bloomer, who adopted a new style of dress in the State of New York in about 1849-50. This estimable lady was not only personally good looking, with a countenance beaming with intelligence, but her dress looked far more tasteful than is represented in the picture. In both beauty and comfort it so far exceeded the fashionable costumes of those days that the writer enthusiastically urged its adoption and quite succeeded in prevailing upon some of his lady friends to appear in public thus attired.

The testimony of those who were induced to try it was decidedly in its favor. At that time, however, the reformation made little or no progress, but now, as remarked by Mrs. Elizabeth Cady Stanton, "the women are riding to freedom on their bicycles." They never looked more fascinating than when standing by their wheels in their short skirts, or more like birds on the wing than when spinning over the streets or pathways. It may be only a wave of progress, but it is moving things on further than they will be likely to recede when the wave subsides.

It is a great pity that we go to Paris for our fashions. It were better for the health of our women if we imported them from China, or from Japan, or from Persia. To reform, however, we need not copy the latter. Some of their styles would hardly answer for our climate. We ought to be able to devise fashions ourselves, suited to our physical wants, and not go to Paris. Let our American women set the Parisians an example, which, when physiological knowledge becomes more general, their better sense may compel them to adopt.

#### LOW-NECKED DRESSES.

Much has been said for and against low-necked dresses. In the early days of Pennsylvania, the law-makers took the subject in hand, and enacted "that if any white female, of ten years or upward, should appear in any public street, lane, highway, church, court-house, tavern, ball-room, theatre, or any other place of public resort, with naked shoulders (*i.e.*, low-necked dresses), being able to purchase necessary clothing, shall forfeit and pay a fine of not less than one, or more than two hundred dollars." It was, however, graciously provided that women of questionable character might go with bare shoulders, as a badge of distinction between the chaste and unchaste. It is astonishing how men are always interfering with women's attire by legislative enactment. Will the women retaliate when they have the ballot and the law-making power? The style of dress prohibited by the early

"Pennamites" is now fashionable at balls and parties, even in Pennsylvania.

If both men and women could be induced to let the neck go undressed *at all times*, there would be less throat and pulmonary disease. The evil lies in sometimes dressing the neck warmly, and at others not at all. For instance, during the winter our fashionable women not only commonly wear high-necked dresses, but in addition thereto, fur capes and tippets. But you will meet the less sensible of them at some social gathering, with either no neck-dress at all, or with one made of some fabric of transparent texture. If they escape a cold after such exposure, it is altogether a miracle. It would be greatly to the advantage of people of both sexes, if they would toughen the neck like the face by exposure. But this can only be done by throwing aside all neck-dress at all times, both out as well as in doors. The fur capes of the women, and the fur and woollen tippets of the men, are a fruitful source of bronchial and throat difficulties. Many a disease of this kind may be cured by simply leaving off neck-dresses. When considerable care is exercised, colds are contracted by tender throats and necks, made so by fur and woollen. When a lady or gentleman enters the house, furs and tippets are laid aside, often when the temperature is colder in-doors with them off, than out-of-doors with them on. It is next to an impossibility to so manage such neck-dresses as to escape injury in consequence of this fact. Especially imprudent is it to put furs and woollens on the necks of children. It is actually "killing them with kindness." They are not, and cannot always be under the eye of an attendant, and their little necks, made sensitive by such warm dressing, are affected in a moment by some unexpected exposure. They may even go out at times without their tippets, though carefully watched, and then mamma has no idea how Charlie or Ida contracted those horrid colds. Would it not be well for those having the care of children, and who are so careful to muffle them up when they go out, to give this matter a little serious reflection, and ask themselves when they have done the little folks all up so securely, whether they have any guaranty that they will return in the same condition. If not, are you not prepared to acknowledge with me that all this muffling is attended with injury rather than benefit? You often wonder why the children of the poor do not more often die in winter from their exposure to the cold; but the cold seldom kills indigent children. Badly ventilated rooms in winter, and bad food in summer, make the mortality of this class greater; but they do not suffer with those coughs and colds, bronchial difficulties and snuffles, which affect the children of the rich.

We might learn something from our antipodes in the way of dressing loosely. On a previous page is illustrated the free and airy clothing of the Japanese. There is looseness enough for freedom of

motion and circulation of air about the skin and a chance for electrical radiation to go on unobstructedly. There is not much weight to such clothing, and what there is, drapes from the shoulders. It is not well adapted to our colder climate and to the diversified employments of our women ; but the lesson of comfort and hygiene is there and we can adopt something of the principle if not the style.

#### ABOUT THE COSTUMES OF MEN.

Dr. Frank Hamilton made a fling at the costume of the men of America, which I shall quote here, for the criticism is worthy of consideration. He said : " We have adopted as a national costume broadcloth—a thin, tight-fitting, black suit of broadcloth. To foreigners, we seem always to be in mourning ; we travel in black, write in black, and we work in black. The priest, the lawyer, the doctor, the literary man, the mechanic, and even the city laborer, choose always the same unvarying, monotonous, black broadcloth ; a style and material which ought not to have been adopted out of the drawing-room or the pulpit ; because it is a feeble and expensive fabric ; because it is, at the North, no suitable protection against the cold, nor is it any more suitable at the South. It is too thin to be warm in the winter, and too black to be cool in the summer ; but especially we object to it because the wearer is always afraid of soiling it by exposure. Young men will not play ball, or pitch quoits, or wrestle, or tumble, or do any other similar thing, lest their broadcloth should be offended. They will not go out into the storm, because the broadcloth will lose its lustre if rain falls upon it. They will not run, because they have no confidence in the strength of the broadcloth ; they dare not mount a horse, or leap a fence, because broadcloth, as everybody knows, is so faithless. So these young men and these older merchants, mechanics, and all, learn to walk, talk, and think soberly and carefully ; they seldom laugh to the full extent of their sides." Golf and other sports are changing all this.

Perhaps as our country expands, there may be as great variety in our dress as that exhibited in the comic picture we take the liberty to copy from *Collier's Weekly*. Uncle Samuel is enlarging his family and taking in all sorts of people. It looks as if the sombre suits of black will have to go.

#### KNIT SUITS, RUBBER GARMENTS, AND FOOTGEAR.

The invention and adoption of knit shirts and drawers have done much to destroy the purity of the blood, and the harmonious action of vital electricity.. The use of flannel as an article of underdress, in changeable climates, is certainly commendable. But to obtain the benefit which wearers usually seek, *i. e.*, health and comfort, such garments must be made loose, and changed often. Red flannel, too, is

better than white. There is something in the chemical qualities of the red coloring matter that seems to act healthfully, when worn next to the skin. People of a rheumatic tendency are greatly protected from attacks of rheumatic pains by the wearing of red flannel. Those who are susceptible to colds are less liable to take one when red flannel is worn.

FIG. 56.



A COMIC PICTURE OF THE COSTUMES OF UNCLE SAM'S NUMEROUS FAMILY.

Knit shirts of whatever color usually set closely to the skin, and often draw so tightly around the chest as to prevent a free action of the lungs. I have had occasion to examine consumptive invalids who were hastening decline by wearing flannel shirts so closely fitted to them that india-rubber could not have been much more objectionable. When worn so closely to the skin, these garments tend to gum up the pores by pressing back upon them their effete exhalations. Flannel shirts should therefore be made up from the cloth, and loose enough to admit a free circulation of air between them and the skin. It is well to wear two, each twenty-four hours, laying off at night the one worn through the day, and laying off in the morning the one which has been worn during the night, so that the exhalations and impurities which may have been absorbed by the flannel can have an opportunity to pass off.

In this connection I would not omit to warn invalids against the use of plasters. Almost daily am I consulted by those who have been

in the habit of wearing them more or less for years. "But," says one, "they are recommended by my physician." Shame on your physician! If he knows the offices of the pores of the skin, he is guilty of wilful malpractice; if he does not, he ought not to be your physician. I know that by thus speaking I shall incur the maledictions of the "regulars," and not a few of those who call themselves "reformers," but what do I care—I have them already. There are said to be nearly *three thousand* pores in every square inch of the human body, and there are from seven to ten square inches in an ordinary sized plaster. Now think, for one moment, of the effects which must ultimately ensue from plastering up *twenty to thirty thousand* of those useful little orifices through which the electrical radiations of the system carry off the noxious and waste matter of the blood. True, you feel a temporary suspension of pain, but do you not know that skilfully prepared embrocations will produce this happy result as well, while they allow the machinery of Nature to go on uninterruptedly? When an invalid comes to me plastered up from the top of his neck to the extremity of his spine, I am invariably reminded of the way in which some South Americans kill prisoners. It is at Montevideo, I believe, that they sew them up in a wet hide, leaving only the head and neck exposed to the vitalizing influences of the atmosphere. When the hide becomes dry it sticks just about as close as a "pitch plaster," and the unfortunate victim dies a slow, but excruciating death. Why, "Mr. Doctors" (as the Germans sometimes call the members of our profession), do you not know that the pores are of as much importance to the human system as the safety-valves to the steam-engine? The pores are actually safety-valves to the animal machinery, and there is not *one* more than is necessary. Do not, then, delude the suffering victim to disease, who has already more noxious and health-destroying matter in his system than he can carry, with the hope that a plaster can be of any possible benefit to him. If he has pains and you cannot cure them with unexceptionable remedies, pass him over to some of your brethren who can. "There is a balm in Gilead, and a physician there."

Overcoats made of the skins of buffaloes are extremely warm in cold climates in winter, and rubber coats are protective in all climates in rainy weather, but garments of both descriptions are unhealthful, because their texture is of such a nature as to prevent the escape of the insensible perspiration. They are most undoubtedly comfortable for a day, but their injurious effects may last for a lifetime. For the same reason, india-rubber, and patent-leather boots and shoes are objectionable. Those who wear either are not unaware of the excessive moisture of the feet when dressed with rubber or patent-leather, and that moisture is simply the dammed up waste fluids which have not been permitted to escape unobstructedly as Nature intended. There are times and

seasons when it may be the least of two evils to put on rubber sandals or boots in stepping out, but when such emergencies do arise, the feet should be relieved of them as soon as possible after re-entering the house. Thick-soled leather boots and shoes are usually sufficient for any weather. The addition of a coating of oily blacking does not prevent the feet within them from perspiring naturally, or the exhalations from passing off freely, and at the same time does most effectually keep out water. Patent-leather is altogether worn for ornamentation, and not from any seeming necessity. The physiologist should, therefore, unqualifiedly denounce it as possessing no merit of utility, while it does possess the demerit of doing injury to the feet of the wearer. Rubber, patent-leather, close-fitting and insufficient dressings for the feet, are in many instances the causes of colds, paralytic affections of the extremities, corns, bunions, etc.

Men usually dress their feet more sensibly than women do. A lady, writing for the *Home Journal*, presents a criticism upon this fact,

FIG. 57.



THE VARIOUS INVENTIONS FOR THE FEET.

and exclaims: "Look at their feet! You don't see one in a hundred venture forth in damp, chilly weather with a thin-soled cloth boot. No! They wear boots with thick soles and high heels; while, on the other hand, you will not see one woman in a thousand who, when the rain is not pouring, but when the pavement is only damp and cold, wears anything thicker than a single-soled kid or a calf gaiter! If you doubt my assertion, go look for yourself at thousands who walk in our crowded cities. Why is there such a difference? Is it that women are inferior to men in possession of good common-sense; or is it that they dress in this absurd manner to please the eye of man? If so, he must bear some of the blame, if, instead of boldly condemning their folly, he encourages them by admiring the beauty of feet dressed in this manner. Let fair women dress as they please in their warm houses, or in warm, dry weather, but, for pity's sake, in cold weather let them find something warmer than a boot which a strong, healthy man would not consider sufficient protection for himself from the dews of summer." There is a healthy reform in progress among women, having reference to the clothing of the feet, and the writer quoted is a little too sweeping in her assertion when she says that not one woman in a thousand exhibits good sense in dressing her feet for damp and cold weather. But her complaint is well put, barring the extravagance of the statement. It is to be hoped that it will every year grow less applicable to women everywhere. When the public becomes sufficiently enlightened, no covering for the feet will look so beautiful as a thick-soled boot.



## SECOND-HAND CLOTHING AND SHODDY.

Second-hand clothing is a medium through which many an aristocratic disease is conveyed to poor people. A wealthy invalid who gives his coat to a poor man without having it cleansed and sterilized, bestows no blessing. No man can wear a garment for one week without imparting to it a portion of himself, and if he be diseased his garment is also diseased. A dog will recognize his master's clothes by the smell, and I have seen those whose clothes anybody with less acute olfactories could recognize by their odor. There is a perfectly simple and philosophical solution of this phenomenon. The electrical radiation of the impurities of the system, commonly known as insensible perspiration, enters the minutest threads of the cloth, and an old coat and pair of trousers contain many ounces of waste animal-matter from the body of the wearer. Bring these in contact with the absorbing pores, and a person is at once inoculated to a certain degree with the noxious matter contained in them. Syphilitic and other venereal diseases are frequently transmitted in this way, and other complaints, probably quite as often, only the latter are not as immediately detected as the former.

Persons should never wear their deceased relatives' clothes, unless they consist of articles which can be thoroughly washed, and then it is doubtful if they can be entirely cleansed of the diseased radiations which must have taken place weeks and perhaps months prior to the last sickness of the wearer. Although individuals of robust constitution often appear well till thrown at once on a bed of sickness, there are unhealthy conditions of the system which always precede acute attacks, and render the clothing unfit for the use of others. The same criticism that has been made of second-hand clothing may be repeated of second-hand boots and shoes. A London medical paper has very properly warned its readers not to wear old boots. It declares that "oftentimes the leather harbors microbes which may prey on the feet of the wearer." If this is true, and why not, of old boots of one's own wearing, how much truer it may be of second-hand articles of this kind, especially if the generous giver has some disease of the feet. It may be suspected of both second-hand clothing and second-hand footwear that they are polluted with filthy bacteria unless they have been subjected to a thorough cleaning, including the use of antiseptics for their complete sterilization. Sweet, clean, new fabric, and leather fresh from the vats of the tanner are none too good for an American pauper.

Shoddy clothes which are manufactured of people's old clothes, cast-off blankets, old carpets, worn-out stockings, flannels, tailors' scraps, etc., are liable to impart disease to the wearer. The process they pass through in the factory undoubtedly disinfects them to some



extent, but there are some rags that no chemical agents can disinfect, and these may get upon the backs of the wearers of shoddy. Both in England and in this country shoddy is extensively manufactured. In this State alone there are many shoddy factories. Millions of pounds of woollen rags are annually made into shoddy in England. Now, who supposes when there is such a demand for woollen rags that small-pox, ship fever, cholera, yellow fever, syphilis, and scrofula can be kept out of shoddy? The great trouble is to detect this kind of cloth before it is worn; after it is worn awhile, the collection of short woollen rolls between it and the lining betrays the character of the fabric. We need inspectors of rags. Will not our humane legislators protect us? If we must wear shoddy without knowing it, let us have its manufacture so looked after that we shall not wear on our backs anything worse than the old stockings, undergarments, and blankets of invalids who have died of ordinary, non-contagious diseases, and the old coats and trousers of decent living people.

In conclusion, I would say, that if costume is indispensable, there are three rules to be observed to secure that which is healthful, viz.: First, cover no more of the body than the dictates of common modesty require, and let the covering be equally distributed. Second, let the clothes be made of entirely new material, and of such as will allow the uninterrupted egress of the bodily impurities, and the ingress of the vitalizing properties of the air. Third, dressmakers and tailors must make clothing to hang loosely about the body, and shoemakers must be instructed to make the outer dressings of the feet with thick soles and easy uppers. When men and women become wise enough to observe these, the adoption of the more primitive style of our first parents will appear less called for.

#### **Bad Habits of Children and Youth.**

Many of the blood and nervous derangements of adult age are but harvests of seed sown in childhood and youth. To begin with, the dietetic habits of children are entirely wrong. Indulgent mothers are mainly to blame for this. Many mothers imagine that they are greatly strengthening the little bodies of their babies by giving them the juices of animal flesh in the form of soup or broth, before they have teeth to masticate the flesh itself, and as soon as the masticating organs are developed they are allowed the diet of an adult. Often, too, they are allowed stimulating drinks, such as tea and coffee, and in some cases even wine. Then, what lots of candy the little ones make away with from one Christmas-day to another. Candy-eating is a habit in which many parents indulge children to an extent calling loudly for the warning of the faithful physician. The innocent darlings are almost ready to bound out of their shoes when papa or mamma brings home

from the confectioner a sweet little package of beautifully striped, red, blue, green, and yellow sugar-plums; of course they are, for they have the most implicit confidence in their dear parents, and know they will not give them anything which will injure them! But parents may not know that there are stomach ills concealed in the pretty spiral streaks which ornament the confectionery; papas are so absorbed in business and mammas in fictitious literature, it is a chance if either of them ever find it out. So long as no immediate fatalities occur to the little creatures it is supposed that such indulgences are harmless. As in excessive meat-eating, and other bad habits, Nature does not cry out at once, and as a consequence, physical injury therefrom is not dreamed of. But ignorance does not shield the juvenile or adult from the deadly consequences of pernicious habits, which gradually undermine the constitution and induce premature decay.

In former editions of this work this page was filled mainly with quotations from Hassell, telling of the injurious adulterations and minerals employed in coloring candies, but times change, and with them the tricks of all trades. New discoveries of organic dyes have been made which make it easy to manufacture candies in various attractive colors without resorting to salts of lead, antimony, copper, etc. Therefore the official or authoritative criticisms in reference to candies have necessarily been modified. The U. S. Department of Agriculture has a division of chemistry under the direction of Professor H. W. Wiley, that looks after food adulteration and issues reports thereon. In the last report, for 1892, Part VI. relates to sugar, molasses, syrup, confections, and honey, and contains an account of the investigations of nine chemists residing in the largest cities of North, South, East, and West. They purchased the cheapest grades of candy to examine, and though true sugar was often found to the extent of only one half, the other ingredients were not really objectionable, being mainly glucose, starch, and flour; and no mineral coloring matters were detected—only a trace, now and then, of copper from vessels in which candies are made. The colors are generally aniline dyes or coal-tar products, used in so very small an amount that it is doubtful if much harm can come from them.

Whatever may have been the sins of candy-makers, evidently science has made possible progress and reform in the art of manufacture in this line as well as in so many other directions, so that now it is perhaps easier to do right than wrong. As to the adulteration

FIG. 58.

THE LITTLE BAREFOOTED  
CANDY-EATER.

with starch and flour, or even glucose, it is extremely doubtful if any injury to the eater can arise from them. The objection to candy-eating now is reduced to the one fact that excess of sweets tends to derange digestion, and favors a process of fermentation which may bring about a very troublesome disorder of all digestive processes. Not only is normal digestion of all proper food in the stomach and intestines interfered with by the ferment set up by candy-eating, but the liver functions also become greatly disturbed, and even the kidneys may be found casting off the excess of sugar in the urine, which is not a proper task to impose upon them. Directly and indirectly, the effect upon the teeth of children is unfavorable, and when general nutrition of the body has become impaired, as it often does, from the candy habit, the way has been paved for the onset of quite a variety of chronic diseases.

"Too much of a good thing is good for nothing," or even worse, is a rule that applies pretty generally to the human organism, and in nothing more surely than in excessive use of sweets. They are natural foods, in a way, but in candies too concentrated. Nature furnishes them diluted for our use in the form of fruit juices, and generally with some acid. When we extract the sugar from cane or beets, we are liable, if tempted by a "sweet tooth," to use more of it than is good for us, and the most likely victims of this appetite and habit are children.

As to the starch and flour adulterations, no harm can be charged against them, since they are more normal foods than sugar, and less injurious, bulk for bulk. With reference to glucose there is a difference of opinion, but the writer strongly favors the view that glucose, as an ingredient of candies, can do no more harm than sugar; and even when used largely, as it is in compounding syrups and bottled honey, it is about as innocent as any of their components.

I have perhaps said all that is necessary about candy-eating; but the evils of meat-eating and coffee-drinking by children have been but briefly alluded to in this place. These habits are such a prolific cause of sickness among the infantile portion of our community, I would urgently direct the attention of mothers to what I have to say on this subject in the chapter on the Prevention of Disease, where I speak of dietetics for young and old.

#### BAD HABITS AT SCHOOL.

At school children acquire many injurious habits, one of which is illustrated in Fig. 59. The effect of this posture is to cramp the lungs, thereby preventing the usual quantity of electrifying air from coming in contact with and arterializing the venous blood. It also curves the spine, the great nervous trunk, and in a measure interrupts the harmonious distribution of the nervo-electric fluid. Hence, both blood and nervous derangements are induced thereby. Parents and

teachers are not particular enough in observing and criticising the posture of the school-boy. Many a case of spinal disease and pulmonary consumption had its origin on the bench of the school-room. Seats should always be provided with suitable backs for the support of the spine, and children should be required to maintain a correct posture.

A great error is generally committed by parents in sending their children to school at an age so tender that the development of the mental faculties seriously interferes with the vigorous formation of their physical parts. A child of three or four years of age, seated on a bench in school is no more in his place than a twelve-year-old boy would be on the judge's bench in a Court of Chancery.

What does he care about letters or syllables? What he learns is not the result of a gratification of a thirst for knowledge, but of a severe and health-destroying discipline, which effects a forced growth of the mind at the expense of the body. The vital nervo-electric forces withheld from the generous development of the chest, the vital organs, and the muscles, are consumed in nourishing and enlarging the brain. In art, mankind exhibit common-sense. The master builder, who is about to decorate his grounds with a superb edifice, first lays a strong and perhaps inelegant foundation upon which to raise the monument of his superior skill in architecture. So the parent, who wishes his child to occupy a commanding and useful position in society, when he shall have arrived at the stature of manhood, should take pains to secure for him a physical foundation which can firmly sustain

the mental superstructure. To this end, children should be kept out of school, and allowed to dig play-houses in the sand, play horse with strings, jump ropes, and roll hoops until their little limbs become hard and chests broad, and, too, until they evince some desire for study. If this desire is manifested before the age of five or six, it should not be encouraged. The first six, and even ten, years of boyhood are none too long to prepare the physical trunk for the nourishment of mental growth. We once had in the United States Senate a man who was taught his alphabet by his wife after marriage. We have had, at least, two Presidents of the United States who hardly saw the inside of a school-room before they became old enough to work and pay for their own education. Nor are these isolated instances of final rapid mental progress of early neglected minds, after the bodies which nourished them had gained both strength and maturity. History is embellished

FIG. 59.



BAD POSITION IN SITTING.

with them. The great Patrick Henry was, mentally, a dull boy, and hated books, but when the flowers of his mental garden, enriched by the nutriment of a strong and matured physical organization, did bloom, the whole country was intoxicated by their fragrance, inspiring the American patriots with an enthusiasm which naught but success could satiate. In the face of such facts, let not parents make intellectual prodigies and physical wrecks of their children. If they possess the germ of greatness, there is no danger but it will become developed by the time society, the State, and the nation have need of them.

#### GOING "BAREFOOT."

A very common practice among the children of the indigent in cities, and those of all classes in the country, is a common cause of blood diseases. In large towns the streets and gutters are the receptacles of filth of every description, a partial specification of which would embrace the diseased expectorations of men and animals, dead carcasses of flies, cockroaches, rats, and mice, killed by poison, poisonous chemicals and acids swept from drug stores and medical laboratories, filthy rags which have been used in dressing foul ulcers, mucus from syphilitic sores, etc., the bare touch of which is polluting. But when, as is almost daily the case, the barefooted urchin "stubs his toes" against a projecting stone, rupturing the skin, and then brings his bleeding feet in contact with this heterogeneous compound of mineral, vegetable, and animal poisons, to say nothing of dangerous microbes, the blood is sure to receive an impure inoculation which, unless eradicated by vegetable medication, clings to the individual through life, rendering him ever a susceptible subject for epidemics, colds, and chronic diseases. In villages, although less exposed to corrupt animal inoculations, barefooted children are liable to have the purity of their blood contaminated by contact with poisonous plants, which abound in country places. And merely a thoughtless gallop through stubble fields, where wheat or oats have been harvested, may impart to the blood of the barefooted child a humor which is sooner or later to cause his death. Because serious effects do not manifest themselves immediately, many parents flatter themselves that the practice is not attended with bad results. But blood impurities are generally insidious, and produce disease when it is least expected.

The following remarkable case of poisoning, by a bone, will serve to illustrate the danger of going barefoot. I will quote from a woman who wrote me upon the subject of her ill-health. This is her narrative: "Up to my ninth year I was in perfect health, with the free use of every sense and faculty. At that time I stepped on a bone while playing in the dooryard. It pierced the foot, but so slightly as to cause but little blood to flow. The hollow of the foot was the place injured, but

no swelling or soreness ensued, excepting that it hurt me inwardly to walk on it. The third or fourth day a high fever made its appearance, and the tongue and lips commenced swelling rapidly. The throat swelled outwardly until nearly even with my chin, attended also with soreness inside. The poison went through my entire system, breaking out on my legs in large sores, which discharged freely. Disease seemed to affect alarmingly the whole inside of my mouth, physicians taking from my nose with instruments two large pieces which seemed like softened bone. Discharges from nose and ears were very free for months, and I became almost deaf for a year, mind almost destroyed, memory entirely gone, playmates, playthings, prayers, and everything, all to be learned anew. Seemed to be nearly idiotic, laughing so long and loudly at the striking of the clock that the striking had to be stopped. During this sickness, which lasted nine weeks, I received no medicine, being unable to swallow anything, only that which was forced down my mouth and throat with a feather. Death was hourly expected, often thought to be very near. My teeth all hung loose, my hands being tied to prevent me from taking them out. My tongue hung far out of my mouth, and that which remained in was so swollen as to nearly fill my whole mouth. You don't know how much I suffer in writing this terrible experience, and I will say no more." This bone was undoubtedly from some animal most thoroughly diseased, and this case may be presented as an extraordinary one. But milder poisons are received into the system by this same contact of bare feet with poisonous substances without producing such marked effects, and the sufferer does not think to attribute the difficulties with which he is contending to such a cause.

I do not believe it was ever intended that every child should pass through the retinue of diseases which is considered the lot of childhood. All tender mothers appear to think that their children must have the mumps, whooping-cough, measles, and scarlet fever, and the sooner the "darlings" have them the better. Now is it reasonable to suppose that human nature requires these diseases as *settlers*, the same as coffee requires eggs or cod-fish skin? If children are brought up properly, they may escape all these diseases. What, with stimulating animal diet, excess of confectionery, bare feet, and so forth, by which the vital fluids of the system become rivers of death, can be expected but nursery diseases! *Corrupt blood* is that which renders the child a ready victim to a whole train of juvenile ills.

#### SLEEPING WITH ELDER PERSONS.

A habit which is considerably prevalent in almost every family, of allowing children to sleep with elder persons has ruined the nervous vivacity and physical energy of many a promising child. Those hav-



masturbation is a prevalent vice ? Some may think it is not. This only proves lack of opportunities for observation, and want of ability to detect its effects upon those given to it. Five children in every ten over twelve years of age bear the marks which this disgusting vice stamps on the countenances of its victims. Children of both sexes are included in this estimate, although the evil is not so prevalent with girls as with boys. Should I speak of boys only, I would say seven of every ten were addicted more or less to it. The fatal consequences of masturbation are painfully apparent to every physician having a large professional correspondence, or an extensive practice in those diseases termed chronic. Undoubtedly, the reason I receive so many letters from the victims of this pernicious habit is because they can, with less embarrassment, present their cases by letter to a distant physician than in person to a resident medical adviser. The habit acts slowly, but powerfully, in destroying the harmony of the nervous system, vitiating the blood, producing, ultimately, a great variety of diseases, according to the idiosyncrasies of its slaves, but more commonly, neurasthenia, mental depression, and insanity. I am daily written to by invalids in all parts of the country, who freely confess the cause which led to their ill-health. I am also often called upon by persons of both sexes affected with diseases which I see, at a glance, are the direct or indirect products of the habit of self-pollution. Some candidly confess it at the outset ; others stoutly deny it at first, but generally, the truth finally comes out by confession or detection. Parents always (and very naturally) dislike to believe their children addicted to the vice. I was once called upon by a clergyman desiring to consult me about the illness of his daughter. I will not state when or where, or the nature of the difficulty with which his daughter was afflicted, as all consultations must be treated confidentially, and nothing be said by the physician to identify a patient alluded to by way of illustration. Suffice it to say, she was a pretty, blooming girl of education and refinement, with no mark of disease, excepting one, and that was the result of nervous derangements, induced, as I readily perceived, by the unfortunate habit under consideration. My first thought was to communicate with her mother, but on inquiry, I found that she was deceased. On communicating my convictions to the father, he exhibited considerable indignation, and said that he knew better. I finally prevailed on him to present the matter to his daughter, and she became overwhelmed with mortification, and solemnly protested her innocence. The father censured me for my alleged erroneous and hasty diagnosis, and left my office, feeling himself aggrieved, and his daughter's sensibility outraged. But what better could I have done ? Here was a disease produced and perpetuated by the habit of masturbation. All the medical skill in the world could not cure her, if she were not informed of the



fact, and the habit discontinued. Not many weeks passed before my course was vindicated. The father called again, made humble apology, said the daughter's remorse for having told a falsehood had rendered her sleepless. She had confessed that I was right, and admitted that her indulgence was frequent. The result rewarded me for the course I pursued, for she gave up the habit, and recovered her health completely. The object of this illustration is to show how parents may be deceived, and how the protestations of a child in these matters cannot always be relied upon.

To show how enslaved a child may sometimes become to the habit, and how unable to relinquish it after its health-destroying consequences are discovered, a more appalling story may be related of a young man who fell into the vice. He consulted me at about the age of nineteen years, after he had become entirely impotent. At a very early age he commenced the habit of masturbation, and at fourteen, by some means, became aware of its injurious effects. He tried repeatedly to abandon the habit, but resolution was weakened by the effects the vice had produced upon his mind, and after many attempts, and as many failures, he actually tried to castrate himself with a jack-knife. He succeeded in removing one of the testicles, but nearly bleeding to death, and fearing to make a confidant of anyone, he desisted from completing the operation, and his habit continued to enslave him till he became impotent physically, and wretched mentally. In this condition, after having read some of my publications, he sought my advice, and confided to me what, if his parents had discharged their duty, would have been confided to them before he became such a wreck, if, indeed, under such circumstances, he would have contracted the destructive habit. If it were necessary, I could fill this volume with harrowing narrations of those who have consulted me in relation to diseases induced by solitary vice, but I trust what has been already related will suffice to make parents watchful. And let me advise young people of both sexes, struggling to overcome the habit, and suffering physically and mentally from its effects, to make confidants of their parents, if the latter have not made themselves unapproachable by their children, or, failing in courage to do this, to present their cases to some reliable physician.

I am often asked for some little tract that teachers or friends may hand to young folks who need a caution in this regard, and have arranged that my publishers shall carry a stock of Dr. Miller's "A Father's Advice to a Boy" (ten cents), and Mrs. Miller's "Mother's Advice to a Girl." They also have the story of "A Blighted Life; or, The Mill Boy—What he didn't know, and what came of it." This *dime* pamphlet is more suitable for youth who have fallen into evil ways, and who need something pretty emphatic to rouse them to reform.

Although physiological works generally fail to explain the reason why masturbation is worse in its consequences than sexual indulgence, most of them are good for something, because they serve as a warning to thoughtless youth. I have never, as yet, read a physiological or medical work which exhibited the real difference between the effects of self-pollution and those of sexual intercourse. In fact, many young people, who have studied the writings of medical men considerably, have asked me why masturbation moderately indulged in is any more injurious than a natural gratification of the passions. This work shall not be incomplete in this particular ; it shall not only sound in the young ear the tocsin of alarm, but give philosophical reasons why the former is positively deleterious, and the latter, in a measure, beneficial. Such an explanation, however, is reserved for Part Third, in which all matters pertaining to the amative passion and sexuality will be thoroughly discussed. Let all of both sexes, old and young, read it, for no one should hesitate to obey the injunction—" Know thyself."

#### STANDING ON THE HEAD.

The juvenile feat of standing on the head is quite extensively practised by school-boys without a knowledge of the injurious effects. I have seen urchins remain in an inverted position till the blood appeared as if ready to gush out of their eyes and cheeks. One case of immediate death from this cause was lately given in an Illinois paper. The effect of the exploit is to impair the circulation of both the blood and nervous fluids, and congest the brain. On a par with this exercise, is that of turning around sufficient to become dizzy and fall down. Little girls are most addicted to this practice. It is injurious to the optic nerve, which is irritated by the sudden changes of objects passing before it, and also to the brain, whose function of distributing nervo-electricity to the system is partially suspended. A rapid spiral motion, in brief, tends to destroy the general harmony of the physical functions. School-teachers should have an eye to their pupils out of as well as in school, and discourage all practices so obviously injurious.

#### THE CIGARETTE HABIT.

I once indited an essay entitled "The Ambition of Atoms," in which I endeavored to show how what we call inorganic particles of matter exhibited sufficient intelligence to associate themselves together in such a way as to be more beautiful and attractive, as illustrated in the rock-crystals, the rhombs of calcspar, the stalactites, and stalagmites, the cubes of sea-salt, the needles of nitre, the precious stones, and the ice which forms upon the window-panes in freezing weather. This ambition exhibits itself throughout all Nature, and suggests quite irresistibly the truth of the doctrine of evolution. Nowhere is it more

markedly exhibited than in the small boy. He no sooner gets into long trousers than he wants to be a man—every inch a man. As the years do not fly fast enough, and the object of his ambition seems to be afar off, he imitates the practices of his seniors, and the virtues being harder to acquire than the vices, he naturally falls into the latter. One of the most common is smoking tobacco. To help the small boy along in adopting the tobacco habit, some man having an eye to business devised a small cigar made by rolling fine cut tobacco in rice paper. This little device became attractive to men who did not quite like the usual pipe or cigar, and was still more largely adopted by women of convivial tastes, but to none was it a greater boon than to the small boy. With this he could mingle with his youthful associates with the same sportive airs he observed among his seniors, and he could imagine himself to be in manners and accomplishments a full-fledged man. The results to the dealers in tobacco can be somewhat measured when it is stated that in 1886 there were manufactured in this country 1,810,961,350 cigarettes, and at this time 4,000,000,000 are placed annually on the market. The manufacturers stoutly insist that nothing worse than the tobacco weed is put into these cigarettes, although it is charged by many that they contain opium, morphine, belladonna, cannabis indica, cocaine, and other powerful narcotics, and to these adulterations is attributed the baneful effects observed upon the small boy. To my mind it is quite objectionable enough that they contain tobacco. The effects of tobacco upon the human system will be sufficiently presented further on without mentioning them here. (See "Bad Habits of Manhood and Womanhood.") I might add, however, to what is said in that place, that Dr. Francis Dowling has been investigating the effects of tobacco on the vision. The *Health Magazine* says "he personally tested the vision of one hundred and fifty men employed in a large tobacco factory. He found that vision was very greatly diminished in nearly one-third the entire number. In thirty cases there was very serious impairment of vision and the men were almost absolutely color-blind. In seventy-five, or one-half the total number, there was a persistent contraction of the pupil and accompanying defects in vision. Other statistics equally convincing might be quoted," and, says this authority, "what tobacco does for the nerves of the sight, it does to every other nerve in the body." It has been charged that the cigarette produces insanity, but Clark Bell is quoted as having presented on some public occasion "letter after letter from neurologists, alienists, and superintendents of insane asylums," probably all smokers, "to the effect that cigarettes had never caused insanity." This reminds me of a colloquy between "Stratekut" and a physician. Queried the former: "Doctor, do you believe that smoking cigarettes ever made one crazy?" "I am not so sure about that," quickly replied the doctor, "but I do

suspect that craziness has caused a good many people to take up cigarettes!" (While reading proof of this matter, New York papers give the story of a young man, twenty years old, made insane through their excessive use). Health authorities and others are so aroused in opposition to the cigarette that laws are being enacted in many States in our Union, forbidding under heavy penalties the sale of cigarettes to young men under a certain age. It is stated, too, that the School Board of the City of New York requires all applicants for the responsible position of teacher to be examined physically as well as mentally, and that one of the causes for rejecting an applicant is the manifestation of any signs of impairment from the use of either tobacco or liquor. It is said that "the cigarette fiend is ruled out." Some foreign countries, noticeably Norway, are pursuing a similar drastic policy, and it is reported that the latter has enacted a statute forbidding the sale of tobacco or cigarettes to youths under sixteen without signed orders from adults. "Even tourists who offer cigarettes to youths render themselves liable to prosecution, while the police are empowered to confiscate the pipes, cigars, and cigarettes of youths who smoke in the public streets, a fine for the offence being likewise imposed which may be anywhere between two shillings and five pounds." The New York *Tribune*, from which these quotations are made, adds: "King James's counterblast against tobacco was light in comparison with the robust counterpuff of the Storthing, *most of the members of which are smokers* and know what they are legislating about."

Precisely so! While the fathers, and in some cases, the mothers, of these youths are making no secret of smoking cigars or cigarettes, they are trying ineffectually to prevent their children by law from imitating their pernicious example. In this broad country the same example is given to the young. There can be no question of the physical evils resulting to father and child from the use of the poisonous weed, but if we would save our boys from such a destructive habit we must, in view of the monkey-like imitativeness of our children, show our sincerity by abjuring tobacco ourselves, and when I say ourselves, let it not be implied that I personally use tobacco, for I never did. But we will let this suffice for the boy and the cigarette. For a fuller exposition of the effects of tobacco, whether used by a child or adult, see the next essay.

To make healthy men and women, an entire revolution is necessary in the training of children. Very few girls and boys, nowadays, bloom into womanhood and manhood with healthy physical organizations. Some of the causes are indicated in what has been said in this essay. The principal errors in their training have been briefly alluded to, and a thousand minor ones cannot fail to suggest themselves to the experienced mother,



### Bad Habits of Manhood and Womanhood.

It is a trite adage that "man is a creature of habit." Indeed, every man, woman, and child has habits of some kind, and nearly every person is addicted to what are called bad habits to some extent. It is a good habit to speak well of your neighbor, instead of saying hard things about him, even when he provokes you. It is a good habit to "do unto others as you would have others do unto you." It is a good habit to preserve personal cleanliness inside and out, by keeping the outer skin or cuticle free from all obstructing accumulations and excretions, and the inside skin, or mucous membrane, uncontaminated by noxious vapors, poisonous drinks, unwholesome food, excrementitious engorgements, and vitiated secretions. Every practice, indeed, which makes the conscience clearer, the mind happier, and the functions of the whole system more regular and thorough in their performance, may be put down as a good habit, and every practice producing an opposite effect may be denounced as a bad habit. It should also be borne in mind that what we may indulge in, or pursue occasionally with benefit, may injure us if it become a habit, and that self-deception is easy if wilful ignorance is encouraged.

One of the most prevalent of bad habits is the use of tobacco. This poisonous weed is extensively used by nearly every community of people under the sun. In New York City alone there are hundreds of thousands of smokers, and nearly as many chewers of tobacco, to say nothing of snuff-takers. It is estimated that its citizens spend more for cigars than they do for bread. The Europeans, and the present white inhabitants of this continent, borrowed the habit of smoking of the aborigines of America, and the Asiatics somehow or other got hold of the trick themselves. Many fashionable ladies on both sides of the Atlantic smoke their cigarettes, and a cigar-dealer in Boston makes the astounding announcement that he sells an average of three hundred *cigars* daily for the use of the fair ones of New England. According to Johnson, every female in the big empire of China, "from the age of eight or nine, wears as an appendage in her dress a small silken pocket, to hold tobacco and a pipe." The Japanese also smoke, women as well as men. A majority of men all over the world smoke, or chew, and not a few boys follow their illustrious example. The poet Milton was a moderate smoker, and Lamb, at one time, carried smoking to a great excess. The latter, in a letter to Wordsworth, said: "Tobacco has

FIG. 60.



SMOKING AND SNUFFING.

been my evening comfort and morning curse for these five years." The great preacher Robert Hall claimed to have adopted the habit of smoking to qualify himself for the society of a certain Doctor of Divinity (?), and finally he became so much of a slave to it, he found himself unable to overcome it. He thanked somebody who was trying to reform him for Adam Clarke's pamphlet on "The Use and Abuse of Tobacco," following with the exclamation, "I cannot refute his argument, and I cannot give up smoking!" A friend one day accosted him with, "Ah! I find you again at your idol!" Whereupon Hall

FIG. 61.



FIRST LESSON IN SMOKING.

responded, "Yes! *burning* it!" Sir Walter Raleigh, who first appeared in England with a pipe of tobacco in his mouth, was said to have had a bucket of water thrown on him by his servant who, seeing the smoke issuing from his mouth, supposed him to be on fire.

In portions of the Southern States, a practice called "dipping" is indulged in to a disgusting extent among women. A little mop is made by mashing the end of a stick of pine, or some other soft wood, and with this instrument stuff is rubbed sometimes for hours at a time on the lips, teeth, and gums. A young miss in Arkansas died from the



effects of snuff-dipping, she having fallen asleep with a mop in her mouth. "A post-mortem examination," remarked the newspaper, "revealed the fact that she had swallowed the juice containing a large quantity of nicotine, which is a deadly poison. Her lips, cheeks, and breast were smeared with the foul stuff in her dying struggles alone in her room." This is shocking, to be sure; but many ladies and some gentlemen, who would be shocked to hear of a friend having contracted the habit of snuff-dipping, may be caught snuffing powdered tobacco into their noses, if you watch them closely. By some microscopic distinction, not perceptible from a physiological stand-point, snuff-taking is considered more respectable than snuff-dipping, and yet, many American ladies, moving in fashionable society, are confirmed snuff-dippers. The gentleman who solaces himself with a fine Havana cigar, considers snuff-dipping and snuff-taking detestable—cannot imagine what makes women do such disgusting things! Meanwhile, another individual with a streak of tobacco juice in the corners of his lips intrudes his presence, and argues (really with truth) that his habit is not so injurious as that of the smoker! Now, the long and short of the whole matter is this: Tobacco is a medicinal plant, just as much as belladonna, stramonium, hyoscyamus, etc., all of which belong to the same order, and should not be indulged in by healthy persons any more than cathartics and emetics. It is a very active narcotic and sternutatory, and should only be used by neuralgic and catarrhal invalids, or those troubled with constipation, and then only for a limited time, and by the direction of a physician. Its habitual use by healthy people is attended with injury to the nerves and blood. The poisonous properties of tobacco are forcibly exhibited in the following extracts from a little work by Dr. Alcott, and from other publications.

#### POISONOUS PROPERTIES OF TOBACCO.

"By the ordinary process of distillation, an alkaline principle in small quantity is obtained, called by chemists 'nicotin,' as well as an oily substance called 'nicotianine.' A drop of either of these, but especially of the former, is found sufficient to destroy life in a dog of moderate size; and two drops destroy the largest and most fierce. Small birds perish at the bare approach of a small tube holding it.

"There is another oil procured from tobacco, by distilling it at a temperature above that of boiling water, called *empyreumatic* oil. It is of a dark brown color and has a smell exactly like that of old and strong tobacco pipes. A drop of it forced into the lower portion of the intestine of a cat causes death, in most instances, in about five minutes; and two drops, applied in the same way to a dog, are often followed by a similar result.



"The experiments on which these conclusions are based have been repeated and verified in this country by Dr. Mussey. His subjects were dogs, squirrels, cats, and mice. The following are among the most important of his experiments :

"Two drops of oil of tobacco, placed on the tongue, were sufficient to destroy life in cats which had been brought up, as it were, in the midst of tobacco smoke, in three or four minutes. Three drops rubbed on the tongue of a full-sized young cat killed it in less than three minutes. One drop destroyed a half-grown cat in five minutes. Two drops on the tongue of a red squirrel destroyed it in one minute. A small puncture made in the tip of the nose with a surgeon's needle, bedewed with the oil of tobacco, caused death in six minutes."

*Life's Illustrated* says : "There is infinitely more poison in one package of tobacco than in the tinfoil that surrounds hundreds. If anybody doubts it, let him but hold a sheet of white paper in the smoke that curls up from burning tobacco, and after a pipeful, or a cigar has been devoured, scrape the condensed smoke from the paper, and put a very small amount on the tongue of a cat, and he will see her die by strokes of paralysis in fifteen minutes."

Mr. Barrow, the African traveller, assures us that the Hottentots use this plant for destroying snakes. "A Hottentot," says he, "applied some of it from the short end of his wooden pipe to the mouth of the snake while darting out his tongue. The effect was as instantaneous as that of an electric shock. With a momentary convulsive motion, the snake half twisted itself, and never stirred more ; and its muscles were so contracted that the whole animal felt as hard and rigid as if dried in the sun."

"The tea of twenty or thirty grains of tobacco," said Dr. Mussey, "introduced into the human body for the purpose of relieving spasm, has been known repeatedly to destroy life."

Dr. Rush said, that even when used in moderation, "tobacco causes dyspepsia, headache, tremors, vertigo, and epilepsy." "It produces," he again said, "many of those diseases which are supposed to be seated in the nerves." "I lost a young man," he added, "seventeen years of age, of pulmonary consumption, whose disorder was brought on by intemperate use of cigars."

All empyreumatic substances impair digestion by interfering with the action of the animal matter, the pepsin, which is the principal solvent agent of the gastric juice.

Bishop Ames, of the Methodist Episcopal Church, one time expressed to the New England Conference his opinion that a large portion of the funds for superannuated preachers is paid to men mentally and physically disqualified by the use of tobacco.

Dr. Woodward, after presenting a long array of facts showing the tendency of tobacco to produce disease—apoplexy, aphony, hypochondria, consumption, epilepsy, headache, tremors, vertigo, dyspepsia, cancer, and insanity—concludes with the following inquiry: "Who can doubt that tobacco, in each of the various ways in which it has been customarily used, has destroyed more lives and broken down the health of more useful members of society, than have been sufferers from the complaint in question (bronchitis), up to the present time, or than ever will be hereafter?"

Professor Silliman mentioned an affecting case of a young student in Yale College, who fell a victim to tobacco. "He entered," said he, "with an athletic frame; but he acquired the habit of using tobacco, and would sit and smoke whole hours together. His friends tried to persuade him to quit the practice, but he loved his lust, and would have it, live or die, the consequence of which was, he went down to the grave a suicide." Professor Silliman mentioned also the case of another young man, in the same institution, who was sacrificed by the same poisonous weed. Professor Pond, of the Bangor Theological Seminary, related one or two similar cases of students whom he knew at Andover and elsewhere.

A distinguished medical man at Brighton, England, has given a list of sixteen cases of paralysis produced by smoking, which came to his own knowledge within the brief period of six months.

All that one may read of the fatal effects of a few drops of nicotine on animals or the testimony of doctors and professors concerning the depressing, even paralyzing, effects of tobacco on boys and men, when used continuously or in excess, cannot so profoundly impress anyone of the evil as personal observation. The writer will never forget the night he spent in watching at the bedside of a man who should have been "in the prime of life," but who lay prostrate, almost totally paralyzed, from excessive use of tobacco. Otherwise his habits had not been far from right, but he was so saturated with tobacco poison that it not only stained his skin, but it soaked deeply into the nerve centres themselves until the paralysis became general, and extended to the heart, causing death. Our *Home Journal* has gathered and contributes the following facts in regard to tobacco: "One of the members of the French Academy of Medicine, in a very elaborate paper, drawn up with great care, asserts that 'statistics show that in exact proportion with the increased consumption of tobacco by its habitues is the increase of disease in the nervous centres (insanity, general paralysis, paraplegia), and certain cancerous affections.' It may be said in reply, that the Turks, Greeks, and Hungarians are inveterate smokers, and yet are little affected by these nervous diseases. But M. Jolly accounts for their exemption by the fact that the tobacco used by them

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is of a much milder form, containing slight proportions of nicotine, and sometimes none at all. Excessive indulgence, therefore, does little harm in this direction ; and no case of general or progressive paralysis has been discovered in the East, where this mild tobacco is in use. M. Moscan says : ' The cause is plain enough, and evidently physiological. In all the regions of the Levant they do not intoxicate themselves with nicotine or alcohol, but saturate themselves with opium and perfumes, sleeping away their time in torpor, indolence, and sensuality. They narcotize, but do not nicotine themselves, and if opium, as has been said, is the poison of the intellect of the East, tobacco may one day in the West prove the poison of life itself. It is the nicotine, in the stronger tobacco used in England, France, and the United States which proves so pernicious, and the French physicians hold that paralysis is making rapid advance under the abuse of alcohol and tobacco.' "

German physicians state in their periodicals that, of the deaths occurring among men in that country, between eighteen and thirty-five years of age, one-half die from the effects of smoking. They unequivocally assert that " tobacco burns out the blood, the teeth, the eyes, and the brain." It has been observed that the manufacturers of this article carry pale, ghastly countenances ; and it is also said that few of them live to old age. Agriculturists say that it soon poisons the soil on which it grows, or rather that it impoverishes the soil more than any other plant in the vegetable kingdom.

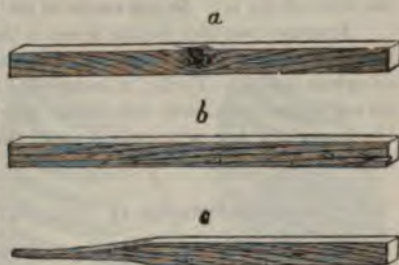
All the foregoing facts have been gathered up from various sources, and enough more might be presented to fill a volume like this. But there is one difficulty induced by tobacco which I have not seen other medical writers advert to. Tobacco is the cause of impotency among men. All violations of the laws of health exhibit their effects first upon the weakest parts of the system. Every individual has some part less able to resist disease than another, and as the procreative system, from childhood to age, is usually more abused than any other, not excepting that ever-to-be-pitied organ, the poor stomach, it is more liable than any other portion of the human machinery to suffer from the nerve-destroying effects of tobacco. To illustrate this proposition, let me give you in Fig. 62 a picture of three sticks of wood having weak points. The one marked *a* has a knot in its centre. A strain coming upon the stick will manifestly break it in two in the middle ; *b* has a worm-hole near the right end, and any child would say that in bending it, if it breaks, it will give way where the worm has punctured it ; *c* has been whittled down pretty small to the left, and here it will break when any pressure is placed upon it. Now, we will call *a* a man with weakened procreative organs, *b* a person with a weak stomach, *c* an individual with contracted chest and weak lungs. The gradual use of tobacco will make *a* impotent, *b* a melancholy dyspeptic, *c* a victim to

consumption. But, as before remarked, more have abused or neglected the organs of generation than have ever injured the stomach, or lungs, and consequently, it is no uncommon thing for the physician to be called upon by athletic-looking smokers, chewers, or snuffers, who complain that they have lost all power in the genital organs. The effect tobacco had produced in these cases is made still more apparent when the reader remembers the *paralyzing* properties of the plant. Then, again, let young men remember that in addition to impotency often resulting from the habitual use of tobacco, the beauty of the face is impaired by it. The *Scalpel*, the mouth-piece of the eminent surgeon, Dr. Dixon, while he lived, presented this fact in language which I cannot do better than quote here: "Both smoking and chewing," remarked

the distinguished editor, "produce marked alterations in the most expressive features of the face. The lips are closed by a circular muscle which completely surrounds them, and forms their plumpy fulness. Now, every muscle of the body is developed in precise ratio with its use, as most young men know—they endeavor to develop their muscle in the

gymnasium. In spitting, and holding the cigar in the mouth, the muscle is in constant use; hence the coarse appearance and irregular development of the lips, when compared to the rest of the features, in chewers and smokers." It is not pleasant to think of becoming impotent and ugly, and still it is a more alarming reflection that so many people are poisoning themselves.

FIG. 62.



DEFECTIVE STICKS.

## HEALTH HINTS TO SMOKERS.

While hardly willing to aid and abet those who will smoke, despite what hygienic science teaches, I am disposed to present before closing, some hints to smokers which have been offered by a German physician, who is probably a smoker himself, and speaks from personal experience, as well as from his professional observations for many years, as stated in the *Pharmaceutical Era*, from which the quotation is taken. It appears that he has been watching the "mouth, teeth, stomach, lungs, heart, and skin of the devotees of tobacco," with the closest attention, and urges the observation of the following rules: "The first and foremost is never to smoke before breakfast, nor, as a rule, when the stomach is empty. Never smoke during any exertion of great physical

energy, as dancing, running, cycling, mountain climbing, or rowing, and especially if in a contest. Never follow 'the bad custom of the French and the Russians' by allowing the smoke to pass through the nose; never inhale it through the nose. Keep the smoke as far as possible from the eyes and nose; the longer the pipe the better; the use of a short pipe during work is to be avoided. A pipe is the most wholesome form of smoking. Always throw away your cigar as soon as you have smoked four-fifths of it. The smoker should rinse his mouth with a glass of water in which a teaspoonful of table salt has been dissolved. It should be used as a gargle at night, and care should be taken that every cavity in the teeth is well washed with it." When one has to carefully obey the foregoing instructions to avoid being fatally poisoned by a weed which is filthy as well as injurious, the best advice is: *Do not smoke at all.*

In some countries Indian hemp is the fashionable poison, in others, the betel nut, and to sum up all, there are about three hundred millions of opium-eaters! Verily, it seems as if mankind were universally bent on self-destruction, and that those who put the razor to the throat are the impatient few who cannot await the gradual results of the popular methods of suicide.

#### INTEMPERANCE IN THE USE OF ARDENT SPIRITS.

The prevalence and fatal consequences of intemperance in the use of ardent spirits have been fully considered under the head of "The Liquids we Drink;" likewise the injurious results of excessive meat-eating under the caption of "The Food we Eat." It is only necessary to advert to them in this place in order to remind the reader that there are other popular habits, equally as destructive to health as the use of tobacco. It is a peculiarity of human nature not "to see ourselves as others see us," and frequently the tobacco-chewer will upbraid his brother for drinking, and *vice versa*, and the excessive meat-eater moralizes on both of these practices, while the pork-eater considers himself the very paragon of sobriety. Probably two-thirds of the temperance philanthropists who are making such strenuous efforts to put down the rum-sellers, are themselves constant patrons of the hog-butcher, and do not dream that they are inconsistent. By eating distillery-fed pork, they actually consume *second-hand liquor*, or, in other words, eat it after the hogs have drunk of it, and still they would religiously refuse a piece of mince pie which was known to contain brandy. Now, my object in writing thus, is not to throw ridicule upon the philanthropic movements of the day, but rather to suggest for them a wider scope, and judicious action. The starting of "tea saloons" to draw away the patrons of liquor saloons is at least questionable, as to real benefit and lasting advantage.

## BAD HABITS IN DRESS.

Bad habits in dress have been investigated under the head of "The Clothes we Wear," but as I declined in that place to treat of the evils of tight lacing, I will devote a little space to them here, inasmuch as it is a practice more destructive to health and longevity in fashionable circles than tobacco-chewing, liquor-drinking, or pork-eating. Women who "will not put their arms through rum-jugs" (as some have appropriately termed the elbows of liquor-topers), must not consider themselves immaculate, which they may be inclined to do, if one of their iniquitous habits is not exposed in this connection. One of the most injurious effects of tight lacing can be seen in noticing the peculiar office of the diaphragm, as represented in Fig. 63; D D exhibit the diaphragm, and M M M the abdominal muscles. The first view represents the diaphragm as it appears when air is inhaled, the other as when the air is expelled. The diaphragm rises and falls to aid the lungs in inhaling vital air, and exhaling that which has been deprived of its electric property and loaded with animal effluvia.

FIG. 63.



POSITIONS OF THE DIAPHRAGM.

How common it is for women to complain of *shortness of breath!* Strange it is that they do not know the cause, when they compress the chest so tight that the free action of the diaphragm is interrupted. Of the many thousand women whose lungs I have examined, at least seventy-five per cent. of them could expand the upper parts of their chest from one to three inches, by tape measurement, while the expansive powers of the lower portions were often less than half an inch, and seldom exceeded one. In those persons who have not habituated themselves to the wearing of tight clothes, the expansive power of the upper and lower portions of their lungs varies only about a quarter to half an inch, whereas, in fashionable ladies, it almost invariably varies from one to three inches. Any woman can try this experiment and convince her-

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self, with a tape measure, placing it first around the chest immediately under the arms, and then to the lower extremity of the lungs. The experimenter, after adjusting the tape, should exhaust the air from the lungs and draw the tape as closely as possible ; then inhale, gradually allowing the tape to slip through the fingers until the lungs are swelled out to their utmost capacity. The figures on the tape generally give a result which will convince the fair experimenter that she has been from childhood a constant violator of Nature's laws.

The disturbance of the functions of the diaphragm is by no means the only evil of tight lacing. The circulation of the blood and the electrical radiations are impeded thereby, in addition to which there is a still greater and more alarming evil. I allude to the pressure which is thrown upon the bowels, and from the bowels upon the womb. The peculiar organism of woman renders the practice tenfold more injurious to her than it would be to the male. The shocking prevalence of prolapsus uteri, commonly termed falling of the womb, is greatly owing to the pernicious practice of tight lacing.

The great mystery to me is that women lace at all. A majority of them who do are members of Christian churches, and are instructed weekly from the pulpit that the works of God are perfect ; do they then mean to wilfully insult the wisdom of their Creator by attempting to improve upon them ? Now this question is a poser to those who belong to the Church of Christ, but as a faithful physiologist I am in duty bound to ask it. The fact is, it is a mistaken notion that wasp waists are pretty. They look *perfectly horrible* ! I would rather see a woman's waist as big round as a bushel-basket than to see it contracted to a size a trifle larger than the neck. I am glad to see that many of the women themselves are beginning to regard small waists as physical deformities. One of them, a Mrs. Merrifield, speaks right out as follows :

### A NATURAL WAIST.

"The very expression 'a small waist' implies a disproportion. A small waist is too small for the general size of the figure to which it belongs, just as a low-pitched room or a narrow room is too low or too narrow in proportion to its height. A well-proportioned room has none of these defects and the waist of a well-proportioned person should be in harmony with the other parts of the figure.

"The ancients do not appear to have recognized the virtue of small waists ; and a modern lady would be in agony if her waist were of the proportional dimensions of those of some antique statues. The celebrated Venus de Medicis—the bending statue that enchants the world—has what would, at the present time, be called a *large* waist ; yet modern connoisseurs and artists have unanimously declared that



this is the most perfect female form which the art of ancient or modern times has transmitted to us. They commend, not only the faultless shape of each part, but the admirable proportion of one part to another. Let us devote a short space to a few observations relative to the dimensions of the waist of this figure.

"The Venus has been frequently measured, and with great accuracy, by artists; but the view taken is a painter's view of a flat instead of a round surface; consequently, instead of the whole circumference of the waist, we have only its breadth from side to side, and from back to front.

FIG. 64.



A CONTRACTED WAIST.

FIG. 65.



A NATURAL WAIST

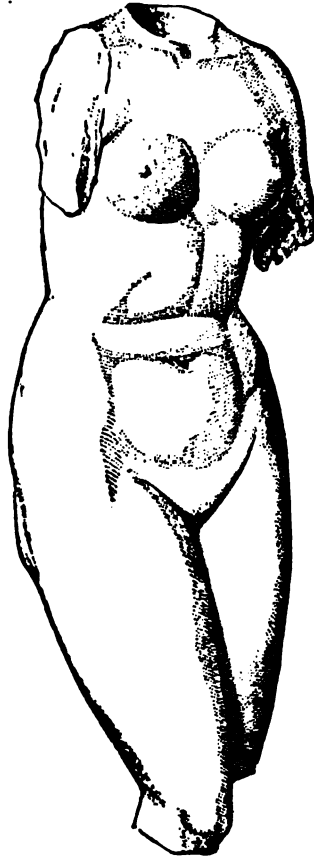
"The whole figure is divided into seven heads and three-quarter parts; each head into four parts, and each part into twelve minims. The diameter of the waist from side to side is one head (or four parts) and eight minims, or nearly one-seventh of the entire height; the diameter from front to back is only three parts and seven minims; it is, therefore, nearly one-fourth longer in one direction than the other. This is the first point in which fashion is at variance with the finest forms of nature and art. Fashion requires that the waist shall be round instead of oval, and she attains her object by compressing the lower ribs, which are forced closer together. To such an extent is this constriction sometimes carried, that the impression of the ribs is left permanently upon the liver.

"But it is not sufficient that the waist should bear a due proportion to the height, it must also be proportioned to the breadth of "

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shoulders. Now, the Venus is just two heads, three parts, and eight minims across the shoulders—exactly half a head more than the

FIG. 65.



FRAGMENT OF ANCIENT (GREEK) MARBLE STATUE OF VENUS, PRESERVED IN NAPLES MUSEUM, ILLUSTRATING DUE PROPORTIONS OF WAIST IN AN IDEAL FEMALE FORM.

diameter of her waist from side to side. When, therefore, there is more or less than half a head proportionate difference between the breadth across the shoulders and the waist, the figure is deficient in just proportion. It is to be observed that some individuals are tall and slight; others short and broad; in all cases, however, there must be a

corresponding agreement between the breadth of the shoulders and that of the waist.

"As we know the two diameters of the waist, we are able to calculate the circumference, which is equal to three heads and four minims, or somewhat more than two-fifths of the entire height. We shall assume this approximation to be correct. Now, the real height of the Venus de Medicis being four feet eleven inches, and two lines, and her proportionate height seven and three-quarter heads, the proportionate circumference of her waist, being three heads and four minims, is equal to twenty-four inches eight minims, more than two-fifths. It may be considered, then, that a well-proportioned waist should be *at least* two-fifths of the height of the figure. Whatever is smaller than this, is disproportioned. According to this scale, therefore, the waist of a person five feet three inches high should not be less than twenty-five and a quarter inches; of five feet five inches, twenty-six inches; of five feet seven inches, twenty-six and three-quarter inches; of five feet eight inches, twenty-seven and a quarter inches.

"We have heard of a young lady of the middle height, or perhaps somewhat under that standard, who found fault with her stay-maker for having made her stays nineteen inches round the waist, when she knew that the young lady's measure was eighteen inches! Eighteen inches! According to scale of two-fifths of the entire stature, which, as we have seen, is under the mark, the height of a young lady whose waist did not exceed eighteen inches, should have been *three feet nine inches*!—the height of a child, with the proportions of a woman.

"Enough has been said," concludes Mrs. M., "to convince our readers that a very small waist is a defect rather than a beauty, and nothing can be truly beautiful which is out of proportion. Would that we could also convince them that they cannot possess an excessively small waist without the certain sacrifice of their health!"

Would that the female portions of civilized society were made up of Mrs. Merrifields, and my word for it, men would have merrier and more beautiful wives, and healthier children. I have never had the pleasure of seeing Mrs. Merrifield, and know not if she is pretty or ugly, but if, by any possibility, she be the latter, her offspring cannot fail to be both handsome and healthy, as a reward to the mother for her obedience to Nature's laws.

IN THE NEXT PLACE I should treat of some of the pernicious habits of married people, in their private relations, were it not for the fact that extended remarks on these will be given in Part Third. They might with propriety be introduced here, for they are common causes of nervous and blood derangements. But the consideration of all matters relating to marriage, its excesses, etc., will be deferred for the place specified.

do no harm if they do no good," in the preparation of such panaceas, they might be useful for the relief of common ills, and especially convenient for families living in sparsely inhabited regions, remote from any physician. Just as our old grandmamas in our childhood used to hang up in the attic certain useful but mild and harmless herbs for minor ills, the prudent housewife might place in the family medicine-closet certain convenient preparations emanating from some physician in whom she has implicit confidence, and resort to them for ordinary coughs, colds, and other slight ailments which can be checked by a mild remedy before they reach the stage requiring more active treatment. In this way the incipient trouble may be aborted. Such remedies, if they should fail in any instance to meet the requirements of a case, would at least cause no aggravation of such incipient disease, but it is well known that many proprietary and patent medicines contain properties that never should be administered except under the watchful eye of a careful physician.

Arsenic-eating is a habit to which many women are addicted for the improvement of their complexions, and the obliteration of the marks of age. So long as our fashionable women are ashamed of old age, and insist on being considered thirty when in fact they are on the shady side of fifty, such desperate remedies for the marks of time will be resorted to by many. Young girls, too, who are willing to sacrifice life itself to look pretty, and especially those who admire "languishing beauties," will continue to eat arsenic, or any other powerful drug, if by the means the complexion may be improved. Until common-sense and the laws of health and life are taught in the family as well as in the common schools, it is almost useless for the physician to "croak," as his voice of warning is often called.

The opium-eater and the morphine fiend hardly need a word of caution in this essay. No adult becomes addicted to a habit of this kind without earnest words of admonition from friends and medical advisers, at least "hardly ever." It is worse than the liquor habit, and, if possible, more destructive. A timely bit of advice, however, to those who have not contracted it may not prove amiss. A good rule for everyone to adopt would be never to take a dose of opium or any of its preparations except by the prescription of a physician, and a timely word to the latter would be to never prescribe any preparation of this drug to relieve pain when something else will tolerably well answer the same purpose. With a practice of over forty years I have not prescribed or administered as much opium or any of its representatives as is usually taken by one addicted to the opium habit in one brief year. It is exceedingly seldom that a physician is justified in employing this insidious drug, and no invalid is safe in self-administering it. Better die outright than lose your senses!

## BAD HABITS OF MANHOOD AND WOMANHOOD. 189

"Opium inebriety," says Dr. George W. Winterburn, "is a topic which has received from the medical profession but a moiety of the attention which it deserves. Our literature is meagre, and but few physicians are familiar with what we have. And yet the evil is widespread as I have stated, and is spreading year by year. That opium is employed largely in excess of any legitimate therapeutical demand, is admitted by even so careful an observer as Dr. E. R. Squibb, of Brooklyn, N. Y., who supposes the importation of opium and opium products to exceed \$2,000,000 in value in excess of the quantities required to fill physicians' prescriptions. Another careful statistician reports more than a quarter of a million confirmed opium inebriates in the United States." In the paper from which this is quoted, the writer refers to the fact that many of the patent and proprietary medicines recommended to relieve sleeplessness, nervousness, and pain contain opium, and especially those prepared for soothing the restlessness and insomnia of infants, and he justly ascribes the prevalence of the opium habit in part to the use of such remedies in the nursery. The little ones who are not killed outright in infancy grow up with an acquired craving for the drug which curses them for life unless they can summon enough self-control to drop the habit or find medical help for their relief. When the will alone is insufficient, the skilful physician can render valuable aid, unless he himself is addicted to its use. It is an astonishing fact that physicians themselves are often captured by the intoxicating drug. Dr. Mattison, in the *Journal of the American Medical Association*, states that "in a *résumé* of 300 cases we noted 118 doctors," and of 125 most recently under his care, 63 were medical men! Such doctors are hardly safe as medical counsellors. If they take it themselves, they are pretty sure to administer it to others. Nevertheless, when one is bound hand and foot to the use of the drug, he should have the advice of a physician of character and good habits. One of my earliest triumphs was the cure of an elderly lady of the morphine habit. She had so accustomed herself to the drug that she took it in doses that would have killed outright any ordinary mortal, and it had made her an unwilling slave to its sedative effects for more than a quarter of a century. With blood and nerve building medicines, assisted by heroic determination on her part, the victory was achieved in a little less than six months. There is hope for the slave of the habit, and to those who have never acquired it, I most urgently say, *opium is dangerous stuff; let it alone.*

### HUMAN NIGHT-HAWKING.

Turning night into day is an injurious and prevalent custom, particularly in fashionable life. Observation and experience have taught almost everyone of adult age, that the habit is destructive to the nerv-

ous system, but these teachers often fail to improve anyone in the absence of testimony founded on philosophy. I have looked in vain in the writings of medical men and physiologists for any rational reason why man should lie down at night and rise with the sun. The effects of the non-observance of this hygienic rule are plainly exhibited by many popular medical authors, but frequently not so forcibly in their literary productions on the subject as in their own faces, which betray the secret that the physiological teacher does not always practise what he preaches.

Such is the happy predominance of the social faculties in the best classes of human beings, the social circle is more attractive than the embrace of Morpheus, and most persons are ready to attribute the injurious physical effects of unseasonable hours for rest to any other cause than the true one. There is, therefore, great need of new light on this subject—something which will appeal to the reason of men, and demonstrate the fact that one hour of sleep at night is worth more than three after the sun has risen. From the investigations I have made, I have come to the conclusion *that during the day the magnetic or electric currents from the sun predominate, and descending perpendicularly or obliquely the upright body is brought in harmony with the descending currents; while at night the magnetic or electric currents of the earth predominate, and flow from north to south horizontally, in consequence of which the human body should be in a recumbent position, with head to the north, in order to preserve the harmonious circulation of the nereo-electric fluids.* That this hypothesis will be favorably received by those who have had much experience as electrical therapists, I am confident; for all who understand the proper application of electricity know that, with few exceptions, the electrical currents from the machine must be passed from the positive to the negative in the directions which the nerves ramify. This being the case, ought not the electrical currents from the sun during the day, and those of the earth from north to south during the night, be made to observe the same rule by a conformity of the position of the body to them? In applying the galvanic battery, if the electrical currents are passed contrary to the nervous ramifications, or from their terminal to their source—the brain—nervous irritation ensues, and the patient is rendered more nervous. Such it seems to me must also be the result of a nonconformity to the directions of the currents of the earth and sun. In fact, we see it exhibited in a majority of those who turn night into day. True, there are a few whose strong nervous organizations appear to resist all such influences, but the continual dropping of water wears away a stone, and these exceptions finally favor the truth of this philosophy.

The sun exerts a powerful magnetic influence on the earth, arousing all animal life to activity, from the merest insect to the most highly

evolved man. The fowls of the air, the beasts of the field, and all human beings who obey the laws of Nature, feel inspired with new life when the golden rays of the rising sun radiate from the east. The activity of the animal fluids increases till he reaches his meridian, and then gradually decreases until he sinks to rest in the West. When "old Sol" retires, the colder magnetic currents of the earth prevail with greater power, animal life becomes more sluggish, the wearied body seeks repose, and the most perfect repose is obtained by reclining in a position consonant with the earth's currents.

#### FAST EATING.

Fast eating, a universal habit with Anglo-Americans, is highly injurious to the nervous and vascular systems, and induces those conditions in the stomach which usually ultimate in dyspepsia. By fast eating I do not have reference to rapid mastication, but rather to a hurried meal when sufficient time is not taken to thoroughly mix the food with the salivary secretions. It is held by some writers that one should chew the food with energy; that by so doing the salivary secretions will be more abundantly liberated; but what is objected to is limiting the necessary time to do the work of mastication in the most thorough manner. It is eminently characteristic of the Yankee to do everything in a hurry. Not satisfied with praying fast, walking fast, working fast, and travelling fast, he generally, and that too, unconsciously, eats fast. His jaws keep time with the locomotive's wheels, and his arms and elbows with the rapid alternate movements of the piston-rods. I was once much amused with an illustration an Italian gave of a Yankee at a steamboat table. Just previous to the sounding of the dinner gong, he was descanting most wittily in broken English on the customs of the Americans and when dinner was announced he proposed to show how a Yankee enjoyed (?) a good meal. With true Yankee impetuosity he rushed to his seat at the table; knives and forks flew in every direction; one arm shot to the right for one thing, and the other to the left for another; while the fork was performing a rapid trip to the mouth, the knife, which had just discharged its load, was nervously returning to the plate. A few such spasmodic motions, and impulsive calls to the waiters, ended the repast, and with a whirl of his chair, he turned almost breathless from the table. Nor was his delineation overwrought. I have myself seen just such spectacles hundreds of times at public tables.

At home at his own table the Anglo-American is not much more moderate in eating. The mouth is crowded with food, and successively washed down with tea, coffee, or some other liquid. Now, it is the duty of the physiological writer to admonish the reader of the effects of this habit, and if, after knowing the consequences, it is still persisted in, no



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one will be in fault but the sufferer. If the worst form of dyspepsia is the result. Perhaps I should say here that rapid mastication is not so much the objectionable habit as the rapid swallowing of the food. Every particle of food should be thoroughly masticated.

The thorough lubrication of the food with saliva is necessary to promote good digestion. Saliva is an alkali, and electrically speaking, a negative, while the gastric fluid in the stomach is an acid and a positive. When, therefore, food descends into the stomach only half-masticated and lubricated with some other fluid than saliva, digestion

FIG. 6.



THE SALIVARY GLANDS.

1—Parotid gland ; 2—Its ducts ; 3—Submaxillary gland ; 4—Its ducts ; 5—Sublingual gland.

for some time is almost suspended, because the negative fluid is wanting to attract the immediate action of the positive fluid, and the presence of other liquids tends to dilute and destroy the power of the latter. In addition to this, the labor of the jaws and teeth is thrown upon the disabled stomach. How surely, then, must the electrical or nervous machinery of the digestive apparatus be disturbed. Then, again, food in the stomach, unless at once acted upon by the gastric fluid, commences a process of decomposition and fermentation, by which means the blood also becomes involved in the pernicious results which follow. If a person eats slowly, masticates thoroughly, and omits all drinks, Nature furnishes *three or four ounces of salivary fluid* with which to

moisten his food, preparatory to its entrance into the stomach. Here the first step in the digestive process begins. No one requires liquids to drink at the table. This habit is the result of fast eating. The salivary glands cannot furnish lubricating fluids fast enough for the rapid eater, so he depends on artificial liquids, which dilute what little saliva is used as well as the gastric juices. Liquids should be taken either before or after eating, and then not to the extent that they are usually. Eat slowly, and depend only on the fluid Nature furnishes to moisten your food.

#### BIG DINNERS.

Still another habit—not, however, peculiar to our fast-living Americans—is that of stuffing the stomach with hearty food on various holiday occasions, when the system does not at all require it. A grand reception is to be given to a live prince, a president, a diplomat, a governor, a general, a congressman, or to one of our ever over-fed aldermen. A “big dinner” is gotten up, regardless of expense, and at about twelve o’clock, midnight, all sorts of game, turtle soup, turkey, roast beef, roast pig, lobster salad, and a thousand other things dignified with French names, and well wet down with champagne, etc., are served to a crowd of red-faced gentlemen, whose vascular fluids are already engorged with red corpuscles and with inflammatory properties by over-eating, done on many a previous occasion. And these big dinners are carried home to the bed-chamber to fill the mangers of night-mares, and feast the hobgoblins of the night which perch upon the bed-posts, and make the sleeper jump from his disturbed rest whenever the sensitive nerves of the brain are pressed and fired by the inflammatory blood. It is surprising that this gluttony—this making a sewer of the mouth and the œsophagus—this midnight bedaubing of besotted lips, has not made mankind ashamed of the mouth and digestive apparatus as masturbation and sexual pollution have made them ashamed of the sexual organs, which were created mainly for reproduction, as eating was instituted chiefly for the purpose of supporting life. I have read of a people, somewhere, who are ashamed to eat in public; everyone seeks solitude while partaking of food; and it may be a debauched ancestry led to this peculiar custom.

On Thanksgiving Day, Christmas, and various other holidays, families get together and abuse their stomachs. Nearly everybody, at such times, eats too much, and does it wilfully; and some eat and drink things on such occasions that are so hurtful to them, that they do not think of touching them at any other time. Now, why eat any more on these days than on any other? Associate together if you choose—have a good dinner—have some dishes you cannot afford to have every day—let your table literally groan under the load of good things; but why

or completely shift the burden as to *grieve yourselves*.\* Let the *able* emotions bear the burden, while you bear away from it no more than you can comfortably carry.

As to public dinners, and all meals prepared simply for *entertainment*, why would it not be better to cover the tables with *light, delicious food*? How beautifully they would look in such occasions, provided with rustic arbors, entwined by artificial vines, and loaded with *raw grapes*; with baskets of apples here, and oranges there, interspersed with bouquets of natural flowers, filling the room with their *delicious fragrance*; gotten up, in brief, with the material and *use* one

FIG. 2.



THESE ARE FIT FOR A FEAST.

meets with at a horticultural fair. How do you suppose the atmosphere of such a feast would seem to a well-fed man, compared with that which is loaded with the fumes of onions, and the odor of scorched animal fats? And, if people are not hungry, but eat simply to be sociable, why not nibble grapes, apples, and other wholesome

fruits, while toasting and chatting, instead of cramming the stomach at midnight with food only suitable at seasonable hours for that of a man who follows the plough, or bends over the anvil? The prevalent practices of banqueting not only injure the stomach, induce disease, and abbreviate life, but they make wise men talk silly. This nation had a President who filled every office of honor, from that of a mayor of a small city to the highest place in the gift of the people; but banquets and feasts made this great man talk like the *habitué* of a common oyster-cellar! A man of distinction certainly requires a peculiarly organized brain, an enormous stomach, and a discreet tongue, to accept and *endure* proffered honors.

Would it not be better—incomparably better—to never partake of solid, hearty food to a greater extent than is necessary to support life and health, and on all public and festive occasions, when it is proposed to have a “feast of reason and flow of soul,” to cover the tables with fruits rather than cooked animals? The demands of the social circle are very different from those of hunger, and people are not supposed to attend a banquet to save a dinner at home.

In giving this advice, I am not unmindful of the old adage, that fruit is "golden in the morning, silver at noon, and leaden at night." This apothegm is based on the indisputable fact that meat-cells are more easily digested than fruit-cells. But we must consider the effects on the blood as well as on the digestion. Much late eating is an evil whether we use meats or fruits. My advice is, *nibble* the latter, instead of gorging the stomach with the former. Let us resort to the least of the two evils. The juices of the fruits will act like refrigerants to the blood, while the juices of the meats, if taken in excess, will heat and inflame it.

"HABIT IS SECOND NATURE."—So says the proverbialist. How important then it is that we should form such habits as will tend to develop physical health and mental vigor, instead of physical decay and mental imbecility. Habit is not acquired in a day—seldom in a year. It creeps upon an individual gradually, and if its effects are disastrous to health and longevity, so imperceptible are the changes it produces in the system from day to day, the victim is seldom aware of the cause of a disease which is developed by it.

Experiment has demonstrated that a man may endure, without pain, the heat of an oven hot enough for baking purposes, if he be placed there while the oven is cool, and the heat is slowly raised to the baking point. But does anyone believe that a person kept in such a temperature, however comfortable it may become to him, will live as long as if he were surrounded with a temperate atmospheric element? Dr. Kane and other Arctic navigators became so habituated to a cold temperature, that they could walk themselves into a comfortable perspiration with the thermometer at *forty-two* degrees below zero, or *seventy-four degrees below the freezing point!* But their enterprising adventure made sad inroads upon their physical organizations, and the brave commander of the early American Polar Expedition, with several of his heroic companions, soon after paid the forfeit with their lives. Thus, we see the flexibility of the human body to conform for the time being to whatever conditions we force upon it, and we also perceive how fatal to longevity are all deviations from the injunctions of *first* nature. We may change our natural habits of eating, drinking, sleeping, etc., to some others acquired, as easily as we can accustom our systems to extreme temperatures, and experience no immediate discomfort; but first nature will some time demand a settlement, and second nature will turn bankrupt, throwing the loss upon his superior.

#### Social Magnetism versus Sexual Isolation.

Some of my readers who have given little or no attention to the subject of animal magnetism, personal magnetism, individual electricity, etc., as it is variously denominated, will be startled at the above head-



imity, while direct sexual contact occurs only incidentally and occasionally, and is in no instance premeditated. In other words, the reservoirs of sexual magnetism in these people are located in the superior brain at the head of the spinal column, among the intellectual and affectional faculties, from which the element radiates diffusively, and envelops the object of attraction, and occasionally extends to, and ignites the magnetic combustible elements below; and not in the inferior brain, seated between the hips, near the extremity of the spinal column, from which, when so located, the element radiates more intensely, but seldom so diffusively, as to light the fires of the affectional nature above. It should be understood in this connection, that the plexus of nerves located near the extremity of the spine is sometimes called the inferior brain.

Looking neither higher nor lower in the mass of humanity, we find a few who possess apparently no susceptibility to the influence of sexual magnetism. If absolutely none, they are not a whit more celestial than their more susceptible neighbors, and are invariably found on examination to be diseased specimens, and not a distinct type having healthy physical organizations.

If now, reader, you are prepared to dismiss all question as to sexual attraction being *natural*, and to admit that interchange of sexual magnetism is instinctively demanded, you are also prepared for the logical conclusion that sexual association is beneficial, and sexual isolation injurious, for Nature's laws are imperious.

There are two essentials to the immediate support of animal life which are known to all, viz.: air and food. Without the first an individual must perish in a few moments; without the latter, in a limited number of hours. There are four essentials to physical and psychical health which are too seldom recognized, viz.: vital electrical air; food possessing not one, nor two, nor three, of the elements of nutrition, but all the heat-producing and blood-making properties of true aliment; sunlight; *sexual magnetism*. Especially are the two latter more instinctively and impulsively than intelligently sought after, and a house-builder strains his inventive genius to shut us out from the sunlight, while the conservative tinker of our social institutions labors to isolate the sexes, suppress sexual attraction, and ignore the existence of sexual magnetism. Do some readers inquire why the nervous system requires sexual magnetism to preserve it in health? If so, and you will enter into the mysterious science of life sufficiently to tell me why the nervous system requires sunlight, I will undertake to answer the question propounded. I have no doubt that plausible reasons could be given for both of these necessities with a little reflection, but it is not necessary for the purposes of this essay to enter upon any long-winded theory to account for them. Enough is contained in this essay to lead irresistibly to the conclusion that the sexes cannot maintain perfect health in isolation.

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### WHERE THE EFFECTS OF ISOLATION MAY BE SEEN.

Where the isolation is only partially maintained, as in Shaker communities, the effects of sexual starvation are indicated. As a body, they look physically dried up. The health of the women, who the more rigidly and conscientiously carry out the principles of Ann Lee, is, according to the testimony of a seceder, not up to the standard of women outside of their communities; insanity is common among them; and yet among these people, under certain restrictions, the sexes have times of meeting. In nunneries we meet with the most marked cases of sexual starvation. Nuns are seldom if ever vigorous looking. Even if they are apparently healthy, there is a paleness about them which indicates a deficiency of that magnetic vitality and red corpuscle which give the true indications of health. They may protest that they are healthy, but their countenances tell a different story, especially to the practised eye of a medical man. Only lately, I was called upon by a well-dressed, intelligent-looking woman, having in charge a delicate, bloodless, cadaverous appearing young woman, of about twenty years of age. On examining her case, I found no indications of organic disease. She seemed to be simply bloodless, and completely wanting in electrical or magnetic vitality. I instinctively diagnosed her case as one of sexual starvation, and turning to the elderly lady, remarked that I should suppose this young woman had been carefully restricted to the society of her own sex. What visible effect this announcement had upon the young invalid I know not, as I was addressing and looking directly at the one who accompanied her, and who appeared for a moment surprised and confused, but finally sufficiently recovered her self-possession to remark that her niece had been till very lately for several years in a convent! Now this young woman had on nothing of the dress peculiar to a nun, and I had not even suspected the aunt and niece of being Catholic in their religious proclivities. I simply diagnosed the case according to its physical aspects, with no word, hint, or suspicion to aid me in forming an opinion. But observation had taught me that such physical prostration is often produced by sexual starvation, and I was convinced it was the cause in this instance, without mistrusting the verdict would receive instant confirmation. My advice was—"Take no medicine—let doctors alone. Go at once into the society of both sexes, encourage the attentions of honorable men, and by social contact draw out of them all the masculine magnetism you can."

The case cited is not the only one I have examined, coming from convents, giving indications of sexual starvation. I have had also from young ladies' seminaries similar cases. Institutions for young women where the exclusion of gentlemen's society is too rigidly enforced are nearly as bad for the pupils as convents. When that gifted woman,



Elizabeth Cady Stanton was a young miss, she was sent to one, and I cannot better describe the effect than by quoting from her interesting book entitled "Eighty Years or More." She says: "After I had been there a short time I heard a call one day: 'Heads out!' I ran with the rest, and exclaimed, 'What is it?' expecting to see a giraffe or some other wonder from Barnum's Museum. 'Why, don't you see those boys?' 'Oh, I replied, is that all? I have seen boys all my life.' When visiting family friends in the city we were in the way of making the acquaintance of their sons, and as all social relations were strictly forbidden, there was a new interest in seeing them. As they were not allowed to call upon us or write notes, unless they were brothers or cousins, we had, in time, a large number of kinsmen.

"There was an intense interest to me now in writing notes, receiving notes, joining the young men in the streets for a walk, such as I had never known when in constant association with them at school and in our daily amusements. Shut up with girls, most of them older than myself, I heard many subjects discussed of which I had never thought before, and in a manner it were better I had never heard. The healthful restraint always existing between boys and girls in conversation is apt to be relaxed with either sex alone. In all my intimate association with boys up to that period I cannot recall one word or act for criticism, but I cannot say the same of the girls during the three years I passed at the seminary in Troy. My own experience proves to me," says Mrs. Stanton, "that it is a grave mistake to send boys and girls to separate institutions of learning, especially at the most impressible age. The stimulation of sex promotes alike a healthy condition of the intellectual and the moral faculties, and gives to both a development they never can acquire alone."

Large factories and cotton mills where females are almost exclusively employed, generally contain hundreds of pale, emaciated women who are slowly dying of sexual starvation, their physical exhaustion being aggravated, of course, by the sedentary character of their labor.

The world is full of women contemptuously called "old maids," who are drying up, and daily growing more fretful and nervous in consequence of sexual isolation; for men, as a rule, cruelly avoid women of a certain age, when Mrs. Grundy brands them with the common distinguishing epithet by which they are known. It is one of the great evils of the marriage institution that a woman may not remain single, enjoying the social consideration of the married, and the social attentions of men, especially when marriage is such a "leap in the dark," and often proves so disastrous to the happiness of her sex. There is improvement in this direction, however, and we are beginning to talk of "women bachelors" instead of "old maids." And the ranks of women bachelors are steadily growing.

[illegible][illegible][illegible]

young men of little money, but much virtue, who would gladly associate with them ; while the young men pecuniarily able to move in the social sphere of the former, are, in a great majority of instances, attracted to association with those with whom their money will purchase the most unlimited privileges. As a rule, having quite too few exceptions, young men of wealth are given to habits of dissipation and licentiousness which disqualify them for association with the respectable daughters of affluent parents, and, consequently, if the latter have the pride of caste common to people of this class, their daughters are deprived of the society of men, and, with all their advantage of position and material comfort, must suffer from sexual starvation.

Occasionally we hear of men effecting great cures by the "laying on of hands," and the response is often playfully made, "Pshaw! He only cures women!" While this is not strictly true, and while the male magnopath sometimes effects cures by imparting his healthy magnetism to a debilitated person of his own sex, it is nevertheless a fact that a majority of his cures are effected in cases of women ; the simple reason for which is, that the want of masculine magnetism led to the nervous derangements, which, in turn, produced the diseases, from which they seek relief. In any given case we may not always find the invalid to be a single woman. She may be the wife of a sickly man, who generates scarcely enough magnetism to keep his own vital machinery in motion, and if he give off any, it is of a devitalized quality ; she may be the wife of a husband who is magnetically repulsive to her ; the husband and wife may be so much alike in temperament, that the forces each generates have, by years of contact, become similar in character or quality. In any such cases, if the wife goes to the magnopath, and he manipulates with his magnetic hand some part of her body which has become the seat of disease, she receives benefit and possibly experiences an entire cure. She receives what her system required, for the time being at least, and she revives. Women often cure male invalids by the "laying on of hands," "magnetic manipulation," etc. I once saw a letter from one conservative gentleman to his equally conservative brother, in which, after telling how much he had suffered from nervous prostration, he said : "I have experienced marked relief from Mrs. ———'s rubbings, which put the animal magnetism into me, and they are more powerful and reviving than any electrical battery. You," he continued, "may laugh at this, but I, as one who has suffered so much, and received such *decided relief*, and in so short a time, could not doubt her wonderful power." This letter was shown to me with quite an expression of incredulity by the party to whom it was written, but its contents were not at all surprising, for the philosophy of the whole thing was entirely familiar to my mind. I had been cognizant of many cures of male invalids by the hands of female magnopaths.

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Cases of disease produced by sexual starvation are not so common with the masculine as with the feminine sex. The late Dr. William McLaury, in an address before the Society of Medical Jurisprudence and State Medicine in 1898, said that "some of the most affectionate, loving girls ever born into life have gone down to despair and suicide, through remorse and self-condemnation at their inability to control their love for men perhaps wholly unworthy." Miss Phelps says no man can realize the agonies women suffer from fifteen to thirty, that is, from the nubile age to marriage. Mandisley, in *Body and Mind*, says: Although women bear sexual excesses better than men do, yet they suffer more than men by the entire deprivation of social intercourse. Sexual starvation is a condition in which either men or women may reach a state when they will sacrifice everything dear in life to them to appease that appetite—money, property, friends, family, reputation, and even the hope of eternal bliss. To prevent or appease this morbid craving of a natural appetite," continues Dr. McLaury, "it is only necessary that the sexes should commingle without too much restraint by conversing, singing, dancing, or even kissing in a decent, orderly manner; but too much law and rigor in things that pertain to the love-nature is worse than none at all, as we all know forbidden fruit is eagerly sought. As a dignified matron once expressed it, 'If it was a sin to take a drink of water, what a luxury it would be!'"

I have said that cases of sexual starvation are not as common with the masculine as with the feminine sex. Why, Mother Nature cannot tell, but undoubtedly Mother Grundy can. Men only are allowed to make advances—they do all the courting—often shabbily—but they do it all; they even allure young and thoughtless girls into trouble; get drunk; swear; chew tobacco, etc., without greatly affecting their personal or family respectability. They may become the fathers of illegitimate children, with the applause of the vulgar, the harmless jests of their associates, and the mild censure of staid people; while the mothers of illegitimate children are turned out of good society, and frequently from their mother's door, without shelter for themselves or the innocent victim of their thoughtlessness. With all their privileges and opportunities, however, I have met with some men, old as well as young, of conscientious or bashful traits of character, or without social opportunities, who were really suffering from physical derangements caused by sexual starvation. There are those who think they should bestow no attention upon a young woman unless with the intention of marriage, and their moral nature revolts at association with disreputable women. There are conscientious young men in large villages and cities, who, not having opportunity for introduction into good society, live as isolated from women as hermits, having no other society than that of men with whom they are employed. Many of these, however, are finally con-

quered by their instinctive longing for the society and magnetism of the opposite sex, and, denied the society of the good and respectable, they lay their conscientious scruples a sacrifice at the feet of harlots.

Years ago the *New York Tribune*, in speaking of the social life of young men, made some remarks which might appropriately find place here, for there has been little or no change for the better. The editor was calling attention to the large and increasing number of youths between fifteen and thirty years of age in our large cities who were without resident friends or kindred, "striving to conquer a foothold, and," exclaimed the writer, "how hard the contest! What daily widening gaps between those who have succeeded and those just entering the field! Neither the religion nor the social enjoyment of our prosperous men seems broad enough to include their employees. Look at the growth of aristocracy and seclusion; the world of folly, luxury, and fashion; the enormous cost of subsistence; the meagre salaries in vogue, and see what chance of comfort or sympathetic ease the town has to proffer her clerks, apprentices, and students. Herded together in the beds and attics of boarding-houses, shut out from the happy homes established by long residence and success, they are almost driven to the public saloons for light and warmth, and for that *friendly companionship*" (and I will add magnetism) "which, either for good or evil, youth instinctively craves and will obtain.

"The employers are surrounded with all the appurtenances which make virtue attractive. The employees are not only urged into vice by their discomforts, but it is vice alone which tenders them an alluring hospitality. She sets forth her convenient bar-rooms, her billiard tables, her concert saloons, her houses of prostitution—in all of which he will find a merry welcome." It may be added that the young men of larger means and opportunities have their clubs, and the more favored individuals of the other sex have their exclusive associations, each not only giving facility to sexual isolation, but rather encouraging the same.

Young men crowd the beer saloons where "pretty waiter-girls" are employed, and really simply for magnetic association with women. Lager, wine, or some other beverage is called for, and often drank reluctantly, for they wish it to appear that the drink is what they are after, at least to those who observe them descending or ascending the steps of the saloon. Sometimes the contents of the glasses are left undisturbed. Many of these young men enter with no libidinous intentions. They feel thirsty or hungry for *something*, they hardly know what; it is not whiskey—it is not beer—it is not tobacco—all these they may purchase at almost any corner, and the tobacco may be chewed or smoked in the streets. No, nothing will satisfy the physical and soul yearnings but the magnetism of women. They may not have

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thought of this element—they may never have asked themselves, or anybody else, what animal and sexual magnetism is—they may never have thought of any such thing—but here they get what they hunger for without asking the name or quality of the article.

### THE NATURE OF SEXUAL ATTRACTIONS.

People of both sexes generally recognize the fact of sexual attraction: few have given the least attention to the subtle element which constitutes it. This element, if investigated, is found not only to be a nutrient, but a stimulant more potent than alcohol, and naturally possessing some of the injurious properties of the latter. It gives vigor, and, in reality, it imparts creative power to all the tissues of the body, and aids in producing and preserving plumpness of form. It stimulates ambition, imparts elasticity to the muscles, and brilliancy to the eye. Of those who are favored with its influence. Both sexes have an appetite for it, and frequently without knowing it. They long for something, they know not what and seek to appease an insatiable desire by resorting to narcotics, stimulants, and berries. Heroin drunkenness has an incentive, which has perhaps never before been thought of; but it is a fact that, with the imperfect social arrangements which characterize our so-called civilization, and which attempt to regulate the social intercourse of the sexes, men and women go up and down the earth famishing for something they cannot, or will not, tell you what—unhappy, unsatisfied, hungry, starving—in some cases stark mad—and finally, in their blind search for what their systems crave, take to liquor, tobacco, or opium.

There are, in fact, to cover the whole ground, two kinds of invisible maintenance, for which nearly all men and women are starving, viz.: the spirit of good and sexual magnetism. One nourishes the moral nature, and by its elevating effects upon the corporeal system, imparts physical health. The other nourishes the physical structure, and by its exhilarating effect upon the nervous system, makes the spiritual nature buoyant and receptive. Both may be made attainable. To invoke and receive the spirit of good, one has only to sincerely and heartily resolve to make moral improvement the chief aim and most important work of his life, and he finds at once a steady influx of the elevating influence. To obtain sexual magnetism, nothing is necessary but association of the sexes, and Society and State should institute such regulations as will not unnecessarily restrict this. Many suggestions bearing directly or indirectly on this subject will be found in Part Third. But I will here present one way in which sexual starvation might to some extent be remedied, without weakening, but rather strengthening, the props of our social system. I would advise the establishment in every community, large or small, at public expense, reading and conversation



rooms, numerous in cities, where the sexes may socially intermingle, whether acquainted or not. They should be under the supervision of a certain number of eminently respectable ladies and gentlemen, appointed as trustees, whose duties it should be to enforce order and decorum, and to exclude only persons of dangerous character. Such rules and regulations could be easily devised and enforced as would effectually prevent those who would contaminate the moral atmosphere of the place from being admitted ; but with these precautions not too strictly instituted, all who are permitted to enter should be admitted without fee, and allowed free social intercourse, without the formality of introduction, unless a committee, with badges to designate it, be organized for the purpose of conducting personal introductions, a practice already in vogue to some extent at balls and sociables. These reading and conversation rooms should be well supplied with books and papers of interest, and open alike to rich and poor of both sexes, and all conventional reserve should be thrown off while at these places, even if put on again when outside of them. Would not such places of resort be full of entertainment for women, and also full of attraction for men ? Would they not, if properly managed, successfully compete with the drinking saloons, gambling hells, and houses of prostitution, in arresting the interest and securing the presence of young men who are now the patrons of demoralizing attractions ? If we create free public schools for the education of our children, may we not with equal benefit to the community create institutions which shall encourage moral, intellectual, and physical development of men and women ? At what fixed age should the State abandon the intellectual and physical culture of its people ?

#### Prostitution.

It is sickening to reflect that in civilized countries there exists, to an extent even greater than in the vast domain where the ethics of civilization are not taught, a class of women who, for a sum of money varying from twenty-five cents to \$100, will put themselves in sexual contact with men for whom they entertain no sentiment of love, no sense of physical attraction, and toward whom they, in many cases, feel an aversion if not disgust. It is also humiliating to all who are working for, and have faith in, the ultimate moral and physical regeneration of the human race, that the amative passions of men can be so morbid as to lead them for one moment to value an indulgence of this nature which can be purchased like a paper of tobacco or a glass of rum ; but look whichever way you will, we are confronted by a masculine element wherein the sentiment of love is so perverted that there is a perpetual demand for demoralizing indulgence ; and a female element wherein perverted love, pride of dress, and destitution stand ready to supply it.



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Hence, sexual gratification becomes an article of commerce, purchased by the male and sold by the female, greatly to the moral and physical degradation of both. The first effect upon the female is moral debasement. Her countenance may have exhibited all the marks of trouble, disappointment, and want; but now she has the additional mark of shame. She has lost her self-respect, and painfully suspects that she has forfeited the respect of others. When this suspicion is confirmed, she becomes bold and reckless. An expression of hardness creeps over her features, and all the artlessness and sweetness of her former face have given way to a look of disgrace, defiance, and self-abandonment. In a little while the violation of her moral nature exhibits its effects

FIG. 71.



THE INNOCENT GIRL CHANGED  
BY HARDSHIP AND VICE.

In her nervous system, and she is obliged to live under constant excitement of some kind in order to feel at all comfortable in mind or body. If the social surroundings are not sufficient to furnish this, liquors, drugs, and narcotics are excessively resorted to for this purpose. Finally, physical corruption, by venereal distemper, is inaugurated. How could this be otherwise? Suppose a person should post himself on a conspicuous corner of the street, or in some building accessible to everybody, and should propose to eat everything that the crowd chose to give him, provided he were paid for it. Then picture to yourself any number of wanton men and boys patronizing his folly—one giving him something he possibly likes; a dozen, something he perfectly loathes, and twenty more, something he is entirely indifferent to, but which he knows he does not physically need. Let this abuse of his stomach go on day after day, and night after night, for months and years. What person is there whose stomach, under such treatment, would not become frightfully diseased? Even voluntary excesses in eating bring on the various derangements of the stomach, known by the one common name of dyspepsia; but what sort of a malady do you suppose the person would have that I have just instanced? Heaven only knows! Well, now, it is unnecessary for me to assure anyone that the procreative system of the female is just as sensitive as the stomach, and that with abuse it is even more liable to disease. With voluntary, unpaid for, excesses, various difficulties, such as leucorrhœa, prolapsus of the womb, etc., ensue; but when a female gives herself up to sexual pollution to everyone who will pay her for it—often entertaining several in one day or night, for whom she cares little or nothing, or cordially dislikes, what may we more naturally look for than the vitiation of the vaginal secretions,

and the generation of poison capable of inoculating the blood of both sexes, and producing local affections of a most frightful character? There is, consequently, in addition to the original stock of venereal disease, about which there is so much dispute as to its origin, a new supply constantly being manufactured in the dens of harlotry, and of a quantity and quality not in the least inferior to any which has been imported.

FIG. 72.



A NIGHT SCENE IN "SUICIDE HALL." MRS. BIRD ON HER MIDNIGHT MISSION WORK.

The hardening and degrading effects of prostitution are visible at all times to the casual observer who walks the crowded main streets of any large city after nightfall, when the glare of abundant electric lights exposes the thin veneer of artificial complexions that cannot conceal "tough" features beneath; but a more impressive and depressing view is obtained by a tour among the free concert saloons and dance halls of "the Tenderloin District" or the Bowery in New York. The interior decorations of such places are gaudy, nay, tawdry, and the frequenters *seem* to be enjoying a "gay life," with no end of "wine,

women, and song ;" but the gayety is as superficial or artificial as the flimsy tinsel decorations of the saloon, and only those pretty well saturated with alcoholic spirits are capable of manifesting any "high spirits" or hilarity, while here and there may be seen many a sober face of delicate features, and, no doubt, refined, in which the observer may trace an expression of regret and hopelessness. The frequent occurrence of suicides of such women at the corner of the Bowery and First Street has led to its being known as "Suicide Corner," and the discovery of a "suicide club," of members who had made mutual pledges to quit their "gay life" in the only way open to them, drawing lots to take their turn. Near this corner is a notorious concert-hall saloon, patronized mainly by jolly tars on an intoxicated cruise about town in search of such women. The true-to-life picture of this resort (Fig. 72) is taken from the *Christian Herald* of April 12, 1899, and shows Mrs. Sarah J. Bird, "the mother of the Bowery," in one of the visits which she makes with the hope of rescuing now and then some victim who is anxious to reform. Generally it is hope deferred, that maketh her heart sick.

The fact is, that even a short course of the intense dissipation generally attendant upon the lives of "fast women" renders them physically, as well as mentally and morally, unfitted for the steady, plodding life of a working woman, and as no one stands ready to offer them a comfortable home as an adopted daughter, or a wife, there is practically no avenue of reform, and so no way of escape except by suicide or death by exposure or disease.

With such inevitable results attending marketable promiscuity, prostitution may be compared to a vast sea of physical corruption, in whose waters the licentious lave and come out lepers. Where the beautiful river, lake, or ocean contributes to the commercial prosperity of any city, there also this great sea of corruption rolls along unobstructed, and thousands of peaceful villagers who daily or nightly frequent the metropolis, in an unguarded moment become submerged in its dirty waters, and then carry home to their faithful wives a disease more loathsome than a suppurating cancer.

#### HOW IT AFFECTS THE INNOCENT.

In 1894 Dr. L. Duncan Bulkley, of New York City, published a prize essay in form of a four hundred page book on "Syphilis in the Innocent," to show to what a large extent, and in how many insidious ways, it is spread about among those who never deserve any such terrible fate. He estimated that even among men ten per cent. of the cases may be due to heedless use of tools, toilet articles, pipes, wearing apparel, or unclean closets, while of the cases among women twenty-five to fifty per cent. acquire the disease in some manner they cannot be

held responsible for. Even children become inoculated with the loathsome disease by many unexpected channels other than heredity, such as nursing, kissing, circumcision, contact with syphilized nurses, unclean handling, and especially by vaccination, of which Dr. Bulkley cites 1,863 cases.

It is a curious as well as sickening account which this writer gives of the methods and frequency of transmitting syphilis to the innocent, and it more than ever proves the necessity of extending a knowledge of such facts to the general public, and warning the innocent, those not addicted to vice, against too careless relations with those who may be. It is simply one more evidence that there is no safety in favoring ignorance, and however unfortunate it may seem to contaminate innocent minds with information regarding such a disease, it is more unfortunate to leave them liable to become easy victims in a hundred unexpected ways, especially when the disease thus acquired is *no less virulent* than when inoculated in the worst way.

Were it universally known to what an alarming extent the pernicious physical effects of prostitution are felt throughout all communities, more decided measures would be adopted under the paternal roof to cut off one of the main tributaries to this gigantic evil. The word of the mother is the law of the household, and she seldom dreams, even if suffering with disease induced by venereal poison, that prostitution can ever inflict a pang in her sheltered home. Why, I have cured hundreds of women from nearly every State in the Union, whose diseases arose directly or indirectly from syphilis, and who would have died of grief had I divulged to them the real nature of their complaints. I will not venture to compute how many have been my patients for the cure of venereal disorders, or diseases arising therefrom. Fowler, in a little work on Amativeness, remarks, "Many do not know how prevalent this disease is in its various forms. Its victims keep their own secret as long as possible, and doctor themselves, except when their case becomes desperate; and then confide it only to their medical adviser, whose very profession forswears him to keep the secret. Oh! how many of our young men have ruined their constitutions, and become invalids for life, solely by means of this disease or attempts to cure it." It is admitted by physicians who are competent judges that "there is one person affected with syphilitic virus in every twenty of our population," and that at the opening of the twentieth century, with a population of seventy millions, without including newly acquired territory, there are not less than three million, five hundred thousand syphilitics! Think of it! And those in the primary stages of the disease are further passing it around, while those suffering from the constitutional taint are bringing into the world innocent babes with blood poisoned with the dread impurity. Professor Tarnowski, of St.

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Petersburg, says "that a syphilitic woman who had come under his observation had succeeded in contaminating with syphilis no less than three hundred men within a period of ten months." This, says a writer, "represents merely the primary transmission of the disease ; it naturally takes no account of the syphilitic taint which would reach the offspring of the men who suffered. Thus from one source, that of an infected woman, an amount of syphilis was disseminated, and injury done to healthy persons, which it is scarcely possible to estimate."

Dr. C. Irving Fisher, superintendent of the State Almshouse at Tewksbury, Mass., tells us that "during the year ending March, 1890, there were admitted to the hospital 1,058 men. Of these one had congenital syphilis ; fifty-four had primary or secondary lesions well marked ; while 496 had tertiary symptoms more or less active—a total of 551 syphilitics, or more than 52 per cent. of the whole number admitted. The statistics of the female hospital are not given because the specific examinations were not instituted until later, and therefore do not cover the whole year." In speaking of the dangers medical men encounter in handling such cases, the same authority says : "I have kept a list of physicians whom I have seen directly or indirectly as patients, with syphilis thus acquired in the past few years, and their number is astonishingly large. The mortality in our own profession from such forms of syphilis is not inconsiderable in the last ten years. If we go into communities of a lower civilization, we find that syphilis is often conveyed in other than venereal ways ; and I think that syphilis should be regarded as leprosy is regarded by public enactment, and by the community. If a leper comes to this port, the newspapers are full of it. He is looked at through a glass case ; nobody wants to touch him or go on the same steamer with him. It is no more dangerous for a leper to come to Boston, to any hospital in this city, to this room, than a case of syphilis, and there is no more danger of infection ; it is not in any way so dangerous to the community as a whole, as is a case of syphilis, and the public should be made to understand this."

I have not the least doubt that over 5,000 males are daily infected with venereal poison in the large cities of the United States, a majority of whom are residents of inland towns, whither they return to spread the seeds of the loathsome disorder ! Men of vicious habits in cities are generally too well acquainted with the different grades of courtesans to contract disease. They know who are "sound," as they express themselves. Their acquaintance with lewd women is not so limited but that they can exercise the privilege of choice. Still, the boasted smartness of these men does not always avail. When the medical seine is drawn, this class is numerously represented. It is estimated that in the city of New York alone, there are about 40,000 courtesans, and this is only one of many large cities in this country.

The reader cannot fail to see from the foregoing facts that prostitution is a prolific source of blood disease, and that it is rapidly converting the great fountain of life into a slough of death. Of all blood impurities there are none which lead to such endless varieties of disease as those induced by the virus with which whoredom is inoculating the whole human race. Then, too, the nervous disorders resulting from marketable promiscuity should not be lost sight of in the summing up. On opening this essay I spoke of the depressing effect which a sense of disgrace inflicts upon a young woman who takes to her embrace a man for whom she has no affection, solely for the money he pays her. Her innate, womanly delicacy is affected from centre to circumference, and if she possesses a particle of natural refinement, her moral nature is no less agitated. How, under such disturbing influences, can the nervous system maintain its normal vivacity and strength?

The male is not simply liable to venereal affection. Unless the female is magnetically responsive to the amative delirium of her companion, the latter has simply practised the act of masturbation, and the effects upon his nervous system are no less injurious than when this outrage upon the genital organs is self-inflicted. It is a well-known fact that the courtesan nearly always has her paramour, upon whom she exclusively lavishes the intensity of her passion, while all manifestations of enjoyment with her patrons are merely pretence. The physical injury which the patrons of the houses of ill-fame suffer in this respect is more extensive than many who have given attention to the evils of prostitution dream of. There is, too, such a thing as *diseased magnetism* which the courtesan may impart when she has no local difficulty with which to infect her patron. If she has repeatedly had venereal disorders, her nervous or electrical fountains, as well as her blood, have been vitiated, in consequence of which her very atmosphere is physically deteriorating.

Nor is physical health alone affected by the diseased magnetism of the courtesan. Character itself is contagious, and more so by sexual than by social association. An intellectual woman who had given much attention to subjects relating to sex, once remarked to me: "If a maiden aspires to be a poet, I would advise her to marry a poet. If she would be an artist, I would say, marry an artist. If an orator, marry an orator." And there was practical common-sense in the remark. The same advice would be of value if given to a young man contemplating marriage, while entertaining an ambition to perfect himself in some given direction. Mental qualities are undoubtedly catching, so to speak, and the more so when the association is so intimate as it is between two persons uniting in the sexual relation. Therefore, the patron of the harlot is not only in danger of contracting a hideous blood malady or nervous affection, but he takes on more or less of the mental



degradation and reckless nature of his companion in vice, and what is more, he may take upon himself the possible villainous magnetism and criminal nature of the man who preceded him as a patron. There is more than one way of being affected by hypnosis. This character, itself good or bad, is catching.

#### STATE REGULATION OF PROSTITUTION.

It has been proposed, in view of the terrible ravages of venereal disease, that the various States in our Union should adopt the plan of State regulation of vice. The advocates of such measures would have courtesans subjected to periodical examinations by competent physicians, who should issue a license to those found to be free from disease, and promptly quarantine those who were not. Whenever it has been attempted, an active band of reformers has loudly protested. A prominent humanitarian from away back, who was active in the anti-slavery crusade, also in the temperance reformation—Aaron Macy Powell—devoted many years of a long and useful life in opposing such a statute, and dropped dead in the spring of 1899 while addressing a meeting for discussing such subjects. I might quote many forcible passages from his writings and addresses bearing upon this matter, but let us see how it strikes the mind of an intelligent woman.

It seems that the editor of the *New York Voice* made a suggestion which called forth an able rejoinder. The following is the proposition of the editor: "A law of some kind seems imperatively demanded. There is no reason why such a law should savor of a license law. It should not provide for the giving of any certificates. It should provide that all examinations of women should be made by women. And it should provide for equally careful and systematic medical examination of men, and the rigid quarantining of men as well as women until they are cured. In other words, the disease should be treated on the same principle that small-pox or cholera is treated by the quarantine laws, not for the purpose of rendering vice less dangerous, but for the purpose of protecting the public from the spread of an infectious disease."

Mrs. Emma Bryant, of Mount Vernon, N. Y., who shows a thorough acquaintance with the subject in hand, replies as follows: "These suggestions raise three questions: First—Is it possible to formulate any law to cover the proposed ground that is not, in effect, a license law? Second—Is the suggestion that all examinations of women should be made by women, and that compulsory examinations should include men as well as women, sufficiently practical to hold out any hope of their becoming *bona fide* features of a new law? Third—Has the result of these acts in the past been such as to encourage the belief that their re-enactment would solve the problem which is vexing the British Army and the British nation to-day?"



"First: The brothel and the saloon are twins, and our experience in dealing with one is most suggestive as to the other. In Ohio, and, perhaps, some other States, it has been claimed that the saloon is not licensed but taxed, and everywhere the opponents of Prohibition insist that laws regulating the traffic savor not so much of license as of restriction. The Gothenburg and all kindred systems are founded upon the principle that men will drink and men will sell, and, to mitigate existing evils of such a business, government itself must become *particeps criminis*; that regulation and not prohibition is the only tenable theory.

"Can the State hold any attitude short of Prohibition toward recognized crime of any sort that does not savor of license? By whatever name it is called, any contagious diseases act, to meet the requirements of those who are clamoring for its re-enactment, must possess certain features. It must recognize prostitutes as a regular annex to every army station in order to bring them under medical supervision; and their discharge from hospital or quarantine and their return to their vocation with the knowledge and real or implied consent of medical examiners are of the nature of a certificate, whether written or unwritten.

"It must sanction the procurement of women to meet the demands of this supposed necessity of British soldiers; to suppose that this demand will be met exclusively from the ranks of those who go understandingly and voluntarily into such a life would be to vouch for the wolf as a safe nurse for motherless lambs, or to entrust the fluffy brood of the farmyard fowl to the tender mercies of the hungry hawk.

"For the information of any who may think this statement too strong, we make here a few quotations from the *Circular Memorandum*, written on June 17, 1886, by order of General Sir Frederick (now Lord) Roberts, Commander-in-Chief in India, and addressed to general officers commanding divisions and districts. The ninth paragraph of this official document says: 'In the regimental bazaars it is necessary to have a sufficient number of women; to take care that they are sufficiently attractive; and to provide them with proper houses.' In furtherance of the instructions of this memorandum, the officer commanding the Connaught Rangers at Jullunder wrote to the assistant quarter-master-general on July 9, 1886, as follows: 'The cantonment magistrate has already on more than one occasion been requested to obtain a number of younger and more attractive women, but with little or no success. He will be again appealed to. \* \* \* The major-general commanding should invoke the aid of the local government by instructing the cantonment magistrates, whom they appoint, that they give all possible aid to commanding officers in procuring a sufficient number of young, attractive, and healthy women.'

"The officer commanding at Jutogh wrote to the assistant quartermaster-general on July 28, 1886, in this wise: 'I have ordered the number of prostitutes to be increased to twelve, and have given special instructions as to the four additional women being young and of attractive appearance.'

"These are features which are inseparable from any form of governmental regulation of vice for the army in India or elsewhere; if it does not savor of license it is difficult to see how else to view it or to characterize it.

"Second: Where could reputable women physicians be found who would be willing to so degrade the profession as to treat venereal diseases, not for the purpose of restoring their patients to lives of usefulness, but for the very purpose of their perpetual return to the same loathsome lives until death puts an end to their sufferings? Echo answers: Where?

"The sentiment of army officers as to compulsory examination for men is voiced by the indignant protest of Lord Sandhurst, who repudiated the suggestion with scorn, saying that he meant to treat his men like men, not like brutes.

"Granting that the end justifies even such means as these, did the law diminish to any perceptible degree the ravages of this disease during the years in which it had full sway, sustained by the power of the government and commanding the services of the ablest medical men? Let the army sanitary commission, the highest authority known to the War Office, answer this question. In a statement sent to the War Office last year, in reply to a request for information upon this point, they refer to the belief of some that the reintroduction of State regulation would raise the standard of health of the army in these words: 'Unfortunately, the facts do not support such an opinion. When the rules were first promulgated, the sanitary department was sanguine that venereal diseases would be reduced to a mere fraction, and even after years of unsuccessful results it was still hoped that with greater care and increased stringency the desired end might yet be obtained. But there can be no question that the outcome was a failure. These diseases increased. \* \* \* Statistical returns from the army medical department in the army at home do not show any more favorable results during the time the acts were in operation. As a matter of fact, the ratio of admissions per 1,000 has decreased since the acts have been abolished.'

"That this law does not assume any such attitude toward venereal diseases as the quarantine laws do toward small-pox and cholera seems to be self-evident. In the treatment of these diseases modern medical science seeks to remove the underlying causes, as well as to cure the sick. By the law under discussion, the cause is cherished and its

necessity assumed. It is not the object of such laws to diminish licentiousness, but solely to obtain immunity from its results.

"I am unwilling to conclude this article," says Mrs. Bryant, "without reference to an important consideration, which seems to have been overlooked in most discussions upon this question. It is the low moral standard which is set before every soldier who enters Her Majesty's service in India, if he is confronted with the fact that the English Government considers it necessary to provide her soldiers with facilities for vice. There is but one logical inference to be drawn, namely: That chastity is not expected of British soldiers; that vice is necessary to the maintenance of the health of one sex, and that that portion of the moral law upon which God and Nature have laid especial stress is for women only; and that, of these even, there must always exist a pitiable fraction, condemned to degradation, to satisfy the necessities of the other sex. This view of the case is so abhorrent to every instinct of womanhood that all the horrors of the loathsome bodily disease seem but the outward sign of the moral malady which is threatening not only England but all civilized nations."

It is only fair to the editor of *The Voice* to follow with his reply, which is this: "We are, it is perhaps needless to say, in thorough accord with the above. What we intended to convey in our suggestions was this: That certain venereal diseases, wherever they occur, in men or women, should be treated on the same basis as any other dangerous communicable diseases, such as small-pox or cholera. A quarantine law is not a license law. The idea that the advocates of former contagious diseases acts seek to convey is that those acts are necessary to prevent the spread of the diseases. We don't believe it. If all that is desired is to prevent the spread of the diseases, treat them as cholera is treated. Compel the physicians to report every case and compel the health authorities to quarantine each person so afflicted. This, instead of making vice more secure, will make it the more odious, and the public health will be much better protected than under the abominable system against which the above letter is a protest."

The plan proposed by the editor of *The Voice* is not practical. It would simply lead the victims of the disease to conceal their malady, treat themselves with such specifics as they could obtain, and risk the result. In the primary stages, and often in the more advanced, they are not physically compelled to take to their beds and call a physician as when prostrated with small-pox or cholera. They are able to go about and attend to their business while complaining of not feeling quite well because of a cold or a little indigestion. Just enough of this explanation to allay suspicion. Nor does the plan of examining a courtesan amount to much. One fact alone is sufficient to indicate its inadequacy. The disease may be transferred from one infected patron

of the harlot to another without the exhibition of the malady in the medium through which it has been conveyed. In other words, the courtesan may impart diseased virus which has been deposited in the folds of the vagina to a healthy visitor before it has had time to produce any direful effect upon herself. Then, too, there are those, doubtless, who are immune, and consequently could be only the medium of its transference. While this is the true situation, it may be said that under State regulation the courtesan would feel secure from police interference, and her patrons would labor under a mistaken notion of immunity from venereal contagion. Such measures have proved their inefficiency in Europe and in India. They have been in a measure tried with no better results in this country ; notably in St. Louis and in Cleveland.

According to the statistics of Dr. Nevins, of Liverpool, which were exhibited as authoritative, there was an increase of prostitution and venereal disease during the years of license in England up to the repeal of the law in 1886 ; "also," says this authority, "in India, where the object of the system was especially to lessen venereal disease among the soldiers, at different places the number of prostitutes provided for the soldiers varied from about one for seventeen men, one for nine men, and one for three men. Yet, the venereal disease was more prevalent among the soldiers provided with the greatest number of prostitutes."

It has been argued, and with a show of plausibility, that prostitution is a *necessary evil*. That did it not exist, our wives and daughters would be unprotected from the insidious advances of libertines, and the forcible outrages of men of reckless passion. My own observation has convinced me that libertines in towns of moderate size, where prostitution is not tolerated, are more given to the seduction of thoughtless wives and unsophisticated young girls than the same class in large cities. But the Rev. Dr. Wardlaw asks, and with propriety : "What special title have the wives and daughters of those who employ this plea to the protection of *their* virtue, more than other wives and daughters ? Why are theirs to be protected at the expense of others, and not the others at the expense of theirs ? Who, in the community, are to be the victims—the vice-doomed safeguards of the virtue of the rest—the wretched safety-valves of unprincipled and unbridled passions ? Are we to have a decimation, by lot, of the virginity of the country ?—or is some inferior class to be sacrificed to the demon of lust for the benefit of those above them ? Is vice essential to the preservation of virtue ? That were indeed a hard necessity. Where is the individual, male or female, and in what rank soever of society—whom I am not to dissuade from vice ?—whom it would be wrong so to dissuade ?—the successful dissuasion of whom would be an injury to the public ?—by prevailing with whom to give up the evil course, I should incur the responsibility of one who shuts a high pressure safety-valve ?—where

the individual whose body and soul I am bound to leave to death and perdition, lest perchance some others should come to be exposed to temptation?" These questions are suggestive, and cannot fail to awaken reflection in the minds of those who claim that prostitution is a necessary evil. If such an institution is inseparable from our civilization, we need a radical change in some department, and if this is impossible, we might at least learn something of our new neighbors, the Japanese. In Japan prostitution and prostitutes are entirely respectable. At least, prostitutes of Japan are far from being regarded as outcasts or disreputable.

Mr. Gerry tells us: "For a long time previous to the contact of Japan with the enlightened nations of the earth, the social evil was looked upon as one necessary and unavoidable, and the government took entire charge of the matter. In a suburb adjacent to the Capital (Tokio), large houses were built for the purpose, some of them elaborate in construction, and the whole guarded most thoroughly by the soldiery. The number of prostitutes in Tokio alone is said to be about five thousand. The children of the poor are usually utilized for the purpose and sold by their parents, who receive a stipulated income as the result. It is not an unusual thing for these girls to marry, and they are *not looked upon as outcasts or pariahs of society by any means*. The girls in these establishments range in age from ten to eighteen, and owing to the developing influences of the climate, at the latter age they are as mature as most of our women at twenty-five to thirty. These are the regular, so to speak, licensed or recognized prostitutes. The women are permitted to leave and marry when they choose. This number, of course, does not include the kept mistresses of foreigners or others, who occupy small houses at the expense of their maintainers. Of these districts, which are known as Yoshiwara, there are five in Tokio and two in Yokohama, the latter possessing probably the largest and best known. The government has entire charge of the system, derives extensive revenue as the result, and under the Japanese code of morals, from which sexual morality is practically excluded, it is said to be a success so far as engendering public peace and quietness. Such a course," says Mr. Gerry, "naturally destroys all appreciation of the vice as vice, and the nation itself being heathen, a very different view is taken by it of women from that recognized by the principles of the Christian religion."

When we call the Japanese "heathens," they may well retaliate upon us by calling us barbarians in view of our heartless treatment of those in our civilization who seem doomed to fill the ranks of harlotry. Whether they succeed any better than we do in preventing the spread of venereal diseases, I have no statistics within reach to inform me. But I see no reason why syphilis should not be as widespread there as elsewhere.

## SOME OF THE AVOIDABLE CAUSES OF PROSTITUTION.

Perhaps a little inquiry into the causes of prostitution will help to settle a difficult problem. One of the primary causes, I maintain, is the premature development of the amative passions of youth by a too stimulating diet. Most parents allow their children in swaddling clothes to indulge in a diet only suitable for adult age. Do they not

FIG. 73.



WHEN SUCH REWARD IS OFFERED FOR VICE.

know that condiments, animal food, and coffee early arouse the slumbering sexual passions of the young? These articles of diet at once impart undue warmth to the blood, and awaken early sexual desires in their children, leading boys to early acquire the arts of the libertine, and rendering girls susceptible to the amorous advances of the opposite sex. Thus, from one parental error, spring up on one side a host of amative libertines, and on the other, scores of voluptuous women who have not the power to resist temptation, all of whom are required by custom to abstain from legal marriage until they have nearly or quite passed their teens. Accompanying this dereliction on the part of

parents is their disposition to rear their children in utter ignorance of their sexual organs and their true function. As a general rule, mothers know very little themselves in this domain, and that little they keep hidden within their own closely knit craniums. I would call the attention of mothers to the essay in this volume giving "Ignorance" as one of the many causes of nervous and blood derangements. What I have offered there need not be

FIG. 74.



AND WANT AND THREATENED STARVATION HELD OUT TO VIRTUE.

repeated here. "Youth has been unprotected and parents unwatchful because ignorant," says Dr. Fisher. "Our work has been curative. It should be broadened, and become educational and preventive." The same writer further says: "As a step in educational work, why should it not be made obligatory upon the physician to place in the hands of his patient circulars regarding syphilis, such as are now furnished by Boards of Health relating to small-pox, diphtheria, scarlet fever, etc., telling the people how to care for the patient, and its dangers, present and future," and I would add, why should it not be obligatory for parents to impart this valuable information to their children? The remedy for these evils suggests itself.



## 220 CAUSES OF NERVOUS AND BLOOD DERANGEMENTS.

Another cause is unhappy marriage. This creates thousands of reckless men and imprudent women. The indissolubility of the marriage contract drives both parties to desperation; makes the husband a willing patron of the harlot, and the wife an easy victim to the libertine. Ignorant of the laws that should govern marriage, men and women are daily rushing into matrimony whose physical, mental, and magnetic uncongenialities are only discovered to them after the "honeymoon" has cooled down their impulses, and left their reasoning faculties unobscured by the infatuation of passion. When they awaken from their dream, they find the civil law a reality, and that they must content themselves to live in their adulterous relation one with the other or incur public disgrace by the commission of some misdemeanor which will entitle them to a divorce. They may not in all cases aim directly at this, but they feel a kind of recklessness which leads them to decide that they cannot, under any circumstances, plunge themselves into a worse condition. Some suggestions for removing this evil will be given in Part Fourth.

Another fruitful cause of prostitution in large cities is the small compensation awarded to female labor. In consequence of this, few are able to earn more than enough to supply present necessities; and when "hard times" prevail, they have neither work nor other resources for subsistence. In such extremities, a few, whose pure souls abhor a life of shame, choose death rather than the princely abode of the courtesan, and end their existence by poisoning or drowning. Many rush into harlotry, for observation has taught them the humiliating fact that men will pay dollars for sexual gratification who will bestow only pennies in charity. It is estimated that over twenty millions of dollars are annually paid in this city alone to courtesans! When such reward is offered for vice, and want and threatened starvation held out to virtue, it is only surprising that more do not abandon the flickering night-lamp and needle for the dazzling chandelier and the easy cushioned *tête-à-tête* of the fashionable brothel.

Hard times and lack of employment drive unknown numbers into a life of prostitution, and in a large city like New York, where there are thousands of women working at an average wage of only sixty cents a day, the margin between life and death is so narrow that absolute necessity must too often be the direct cause of "the first step downward." Imagine their extremity when work slacks, and there are no savings to tide over a dull spell. The periodical expansions and contractions in all business, as at present carried on, are a factor in the causes of prostitution which indicates the impossibility of eradicating it without an entire change in business methods and social arrangements. Speaking of these, W. J. Strong, in *The Public*, is quoted as saying: "Chattel slavery is not as inhuman as economic slavery. True, chattel slavery

was the breeder of lust and licentiousness. True, it separated husbands and wives in some instances, when slaves were sold; but is not the economic slavery of our day responsible for nine-tenths of the prostitution of to-day? Are not many of the wives and daughters of to-day sold body and soul for the necessities of life?"

The late Frances E. Willard, President of the Woman's Christian Temperance Union, in an address in London before a convention of that organization, stated the situation in the following unmistakable language: "Poverty and dependence are the curse of women and all the world. Very few women ever sink so low that the virgin dies out of their hearts. When they meet one whom they deem worthy to be the father of that future child, for whose sake every woman is, in the thought of every reputable man, a Madonna, either actual or potential, they have risen rather than fallen. It is the hunger that cries out for bread, and the cowardice that cannot cope with death, which lead women to that awful commerce so much worse than death could be, which is the fountain of disease and diabolism to men and women both, as they find out; and which is far worse even than that awful blight of African slavery, which was characterized by Dr. Livingstone as 'the great open sore of the world.'"

It is said that out of 5,000 prostitutes in Paris, whose cases have been minutely examined, 1,400 were reduced to that state by sheer destitution! A writer remarks that "there are fifty or sixty families in Edinburgh who are almost wholly supported by the secret prostitution of the mother, and three times that number who are partially maintained in the same manner. A daughter had struggled on six years to support herself and bedridden mother by the needle; before sacrificing her virtue she sold the last blanket from her mother's bed and her own last dress."

"Who will deny," says a writer, "that these are startling statements? And what is true of European cities is true of American municipalities to a greater or less degree. Young girls can always get money in our large cities by bartering their virtue. It is an unfailing *dernier resort*. Why should it be thought strange that a female, pressed by pale want, should submit to an act which a male will commit in the absence of this necessity, and without a scruple? And why, especially, should it excite wonder, while black-hearted seducers and procuresses, knowing this want, swarm thick around, ever ready to take advantage of their distressed condition?" And why should there not be seducers, procurers, and procuresses, when such an example is set by civilized governments in procuring good-looking young women to satisfy the lascivious desires of their soldiers?

For this evil it is difficult to suggest an immediate remedy, such is the spirit of rivalry, speculation, and selfishness in the commercial

world ; but there is one which time and change in public opinion is slowly introducing. It is the educating of girls as we do boys, in the practical business matters of life ; opening to them the pursuit of all trades and professions to the end that their fields of industry may not be unreasonably circumscribed. Our social regulations, which unjustly limit the industrial sphere of women, frequently place them in a condition of want, without shelter for their heads, or food for their stomachs. They are confronted by two alternatives, beggary or prostitution. In pursuing the former, they meet the frowns and whining excuses of those more fortunate in life, while in the latter money comes freely from the hands of willing patrons, who not only give them sustenance, but privily flatter their vanity. All trades and professions should be open to women, and they should be compensated as liberally as men for their services. "One of the greatest boons and one of the surest prophecies which can be offered as a result of the industrial emancipation of women," says Carroll D. Wright, Commissioner of Labor, "will be the frank admission on the part of the true and chivalric man, that she is the sole rightful *owner of her own being* in every respect, and that *whatever companionship may exist between her and man shall be as thoroughly honorable to her as to him.*" The cure certainly does not lie in driving the poor creatures, who eke out a miserable existence in the brothels, from one quarter of the city to another with the relentless policeman's club, and treating them as hopeless outcasts. There is a deal of cruel hazing outside the college campus.

Another cause of prostitution has its origin in the ignorance which prevails concerning the power and phenomena of animal electricity, or magnetism, as it is generally termed. All classes of females, from the daughters of the affluent to the pretty shop-girls, contribute inmates to the brothel. In consequence of ignorance in this matter, they are not aware that some men possess electrical power to charm like the snake. Nor are they sufficiently educated in regard to the strange passion existing within themselves, to know how weak, under some circumstances, they may become to resist temptation. The philosophy of this charming power will be thoroughly explained in Part Fourth, but the consequences admit at least an allusion here.

Coquettish ladies are apt to invite the attention of prepossessing strange young gentlemen, and coquettish young ladies, I am sorry to say, are numerous. They commence flirting with their admirers with the predetermination of keeping their affections to themselves ; still they will venture much to ascertain the sentiments of their pretended lovers. Sometimes they are pleased to see how they can amatively exasperate them ; but gradually they become practically mesmerized, when pretty coquettes find themselves, like the fluttering bird before the charming serpent's mouth, utterly unable to control themselves.

The keepers of houses of ill-fame in large cities know that many are possessed this singular power to charm, through perhaps are not of their kindred the mysterious agent they employ to produce this fascination. The result is that men who are so powerfully electric or magnetic as to be able to exercise such a controlling influence over young women, are stationed in all large manufacturing towns where female operatives are numerous, to rescue them from victims for the fashionable dens of prostitution. A partial remedy for this evil may be given in a few words. Young ladies must not make too free with young gentlemen, whose characters are not favourably known in the neighborhood in which they reside. Observation of this rule may sometimes cause Julia to turn her back upon an angel: but as devils are more numerous in travelling trowsers and waistcoats, so serious a slight will seldom be given to celestial broadcloth.

Still another cause of prostitution is "sexual starvation." As the preceding essay is devoted to this subject, I will only allude to it here as a promoter of prostitution. There is a natural appetite—an insatiable craving, if denied—of one sex for the society and magnetism of the other. If free social intercourse between men and women be provided and encouraged in some rational and elevating manner, magnetic equalization would take place in a great measure simply by social contact, and that intoxicating attraction, aggravated by isolation, which, when the sexes come together, is liable to lead to direct venery, would be forestalled. The free interchange of the sexual magnetic elements in an elevated social way would greatly tend to prevent those earthquake and tornado outbreaks of passion which result in rape and sexual pollution. The man who is stomach-starved will devour the flesh of his fellow-man, or even his own tissues, as illustrated in narratives of shipwrecks; and the man of strong amative passions, who is sexually starved and isolated from the female element will, when opportunity occurs, outrage the persons of passionless little girls; or appease his heated desire in sexual contact with women reeking with disease, in the low dens of harlotry. It is utterly useless to shut one's eyes to these facts, and the only way to avert them is to try, by morally elevating means, to so equalize the magnetism of the sexes as to prevent thunder-storms of passion, such as newspapers daily chronicle from one end of Christendom to the other. A partial remedy for sexual starvation is given in the essay on this subject, and those philanthropic men and women, who hope by combined action to repress or exterminate the natural passion of amativeness in other people, while they do not expect to effect such a result in themselves individually, had better expend their ammunition in the direction I have pointed out.

In reviewing some of the principal causes of prostitution, can we not see that if it really be a necessary evil, it is so because of important errors

in the training of children ; unsuitable civil laws regulating marriage ; despotic customs circumscribing the industrial sphere of women ; ignorance of the electrical power of every individual for good or evil ; and of the social despotism which separates the sexes ? Reformation in the training of children is the first place to begin to extinguish prostitution. So long as the sexual passions of children are stimulated to precocity by an exciting regimen, and goaded to illicit gratification by all sorts of fictitious and exciting literature ; so long as they are reared in utter ignorance of the function of the sexual organs and of the passion which is sure to take possession of them ; so long will there be men who will violate the marriage-bed, and destroy virgin purity where the institution of prostitution is not tolerated ; and so long will houses of ill-fame be furnished with women from all ranks of society.

In full view of the moral and physical degeneracy of the condemned courtesan, however, it is wrong and uncharitable for her sex to abandon and leave her in her unhappy situation without persistent effort for her reformation. Popular opinion and action are all wrong here. Let a woman—no matter how destitute—no matter what palliating circumstances may be urged in her behalf, once become the inmate of a brothel, she is condemned to stay there until she comes to moral and physical rottenness, unless she have force of character sufficient to rise unaided from her degradation ; and even then she must buffet social isolation, and the chilling contempt of her more fortunate sisters ! What wonder that the poor prostitute considers herself an *abandoned* woman ! Even when death rescues her from social and physical wretchedness, her body is denied a “Christian burial !” Think of it, men and women who profess Christianity, and then call to mind the words of Jesus : “The publicans and harlots go into the kingdom of God before you.”

There are thousands of women to-day, whose naturally pure spirits are chafing and their divine forms wasting in the atmosphere of prostitution, who are better educated and possess better qualities to make good wives, mothers, and thorough workers in the cause of humanity than many daughters of affluent parents. All they need is a sympathetic, encouraging, and loving hand extended to them across the almost impassable gulf which a false society has too rigidly fixed between the condemned ground upon which they stand and the fields of usefulness and respectability. A little moral and material assistance, extended by women and encouraged by men, would deliver thousands of females—naturally good—circumstantially bad, from brothel hells. Shall they receive it, or will woman continue to be cruel, uncharitable, and unjust, to the more unfortunate of her sex, who are perishing morally, and whose gradually dying bodies are inoculating the whole human family with putrefactive disease ?

Unhappy Marriage.

"Last year we paced the yellow sands  
Beside the restless sea ;  
I held in mine your tiny hands  
And drew you close to me.  
I marked your blushes come and go,  
The sigh, the smile, the tear ;  
The words you whispered soft and low,  
Were music in mine ear.

II.

"We two were dreaming Love's young dream  
Beside the murmuring sea ;  
Your presence made the whole earth seem  
A paradise to me.  
We said our love would never change,  
Would no abatement know  
While life should last—it seems so strange  
'Twas just a year ago.

III.

"Once more we pace the yellow sands  
Beside the summer sea ;  
I do not hold your tiny hands,  
You do not cling to me,  
I do not press you to my heart  
And kiss your snowy brow—  
We're strolling twenty yards apart,  
For we are married now."

The foregoing from the *Boston Courier* presents one sorrowful picture, and those instances where the motive at the outset is to secure home, position, or wealth, without the sentiment which animated the mistaken pair described in the quoted verses, usually turn out infinitely worse. Unhappy marriage contributes greatly to the lowering of tone and vigor of both the nervous and vascular fluids. The mind chafing in the galling fetters which bind it to an uncongenial companionship, almost forgets its corporeal dependency, and consumes within itself the nervo-electricity which should be dispensed through the nervous system, to impart vitality and healthy action to the blood and the organic machinery. Unhappy marriages are unlike any other troubles, because society is so constituted that a majority of their victims prefer rather to fall suicides to their self-inflictions, than to encounter the frowns of their friends and acquaintances by practically severing a contract which yields little but mental disquietude, affectional suffocation, and nervous and vascular debility.

The world little knows the extent of matrimonial inharmony. Each pair who find themselves unhappily mated, imagine that they

[illegible][illegible][illegible]

**Maintaining** — The maintenance of the system is the responsibility of the user.



and Sir John Davies put a similar statement of fact in verse, as follows :

" Wedlock, indeed, hath often compared been  
To public feasts, where meet a public rout,  
Where they that are without would fain go in,  
And they that are within would fain go out."

This is, however, too serious a matter to incite levity. The divorce courts give only a partial glimpse of the skeletons in the domestic closet, and such as are attainable are indeed surprising. Appleton's Annual Cyclopædia for 1883 gives the report of the Commissioner of Labor covering a period of twenty years from 1867 to 1886, inclusive, in 96 per cent. of the 2,700 counties of the United States. From this report it appears that there were 328,716 divorces! "Of the six New England States, Massachusetts had the greatest number, 9,853!" And this staid old commonwealth only grants divorce for one or two flagrant causes. "The little Republic of Switzerland makes the startling exhibit of 10,501 in eleven years." "Among the Greek Catholics of Russia for nineteen years there were 17,601!" "The total in the German Empire during six years was 84,082!" In France, before the passage of the "Naquet Bill," there were 5,000 judicial separations granted annually, and after that bill was passed in 1883, permitting complete divorce, there were, when last reported, about 13,000 divorces granted each year! Returning once more to our own country, it has been said of Tolland County, Conn., that there is one divorce to six marriages. Then out in Fargo, North Dakota, in 1896, a local newspaper reported the divorce colony in that city alone at that precise moment to number 150 members. As these depart with the coveted decree, as many new ones come in to take their places. "The conditions that exist in Fargo," says an encyclopædic writer, "are to be encountered in all large cities, but the business is conducted on a smaller scale."

If one should gather and publish the divorce statistics of all the States in our Union and in all other countries, they would probably surprise people who give little thought to these matters, and still it must be constantly borne in mind that in many foreign countries and in some of our States it is extremely difficult to obtain divorce. For instance, in South Carolina divorce cannot be obtained for any cause. This fact, taken in connection with the further circumstance that most people will suffer deeply in silence rather than exploit their family troubles in court, it can approximately be seen how much there is of human misery, causing not only mental unrest, but physical disturbance, resulting from unhappy marriage. Many and many a time have I been consulted by women whose minds were nearly unbalanced and nervous systems exhausted because of unhappy alliances with men whom they found they could neither respect nor love; but they had great benevolence, and rather than make their husbands unhappy by

the disclosure of their real feelings, they concealed their discontent, and their hidden troubles were steadily bearing them to a premature grave. Ah! how many wives whose eyes fall upon this story will see in it the mirror which reflects their own miserable situation! Rest assured that these women are not the only ones whose benevolence and pride bind them to an unnatural union, and the concealment of their wretchedness.

Unhappily, the victims to uncongenial marriages are not alone sufferers thereby. The nervous, puny offspring, which is the issue of such adulterous alliances, opens its eyes on a world of physical and moral wretchedness, and hence the sin of the parents is visited upon their children of the first and every succeeding generation. So marked are the physical influences of unhappy marriage on the offspring, I can generally tell at once, when I see a family of children, whether the father and mother are happily or unhappily mated. Both mental and physical suffering is the inevitable inheritance of the unfortunate child who is born of ill-mated parents; and if it survives the fatal tendencies of a poor constitution till it becomes a parent, its child, in turn, will possess at least a trace of its progenitor's infirmities, and so on through the whole line of its posterity.

For further remarks on this subject, embracing a treatise on the causes, effects, and partial remedies for unhappy marriages, the reader is referred to Part Fourth of this work, where it will receive the attention its importance demands.

#### **Impure Vaccination.**

About the year 1796, a country-woman astonished her surgeon by telling him that she could not have the small-pox because she had already been affected by the cow-pox. The woman was fresh from the cow-yard and the country, and the surgeon was Dr. Edward Jenner, a physician at that time of no very great prominence. Dr. Jenner at once set himself to the work of investigating the country-woman's whim, when he found that the dairy-maids frequently contracted a disease from an eruption on the bag of the cow, which affection was called cow-pox. Jenner therefore supposed, and attempted to prove, some close relationship between cow-pox and small-pox, with the hope of placing the practice of vaccination on a scientific basis. He experimented with several forms of pox disease with variable results, but finally settled down on the theory that a disease of the horse's hoof, known as "horse-grease," was the source of human small-pox and of cow-pox. A boy named Baker, whom he inoculated with "humanized grease," taken from the hands of a man who had caught it from the heels of a mare, died from the severity of the malady, and so he was induced to modify it by working it through the cow. His own child he inoculated with swine-pox, and this he would have advocated as a

regular practice, except that he appreciated that it was too disgusting to secure popular acceptance. Jenner's "great discovery" has been celebrated by an artist's statue (by Monteverde), which pictures him in the act of "vaccinating his son," but it doesn't seem so pretty when we remember that it was "porcination," instead of vaccination, he was inflicting on his first-born, and that the boy subsequently died of consumption before reaching manhood; but that is only one of thousands who have since that time succumbed to scrofulous and infectious diseases implanted with the virus used in vaccination. It seems remarkable in view of Jenner's few experiments, shifting arguments, and the many early failures of vaccination to protect, that he should have succeeded in overcoming the numerous objections to it, and establishing a general belief in its efficacy, which, in course of time, led to its official adoption and legal enforcement in many of the most civilized countries of the world; but this is, after all, but one of many curious medical errors and superstitions that have dominated the minds of men; and in the home of its birth, England, there is a strong and growing reaction against it which is surely destined to lead to its abolition. With our increasing proneness to ape English customs, when vaccination shall be turned down in England our "scientists" and authorities will be pretty sure to follow master.



FIG. 76.

JENNER VACCINATING HIS CHILD  
WITH SWINE-POX.

The English people suffered the inconvenience and distress of compulsory vaccination from about 1850 until 1880, when, under the leadership of Mr. William H. Tebb, a society was formed for the abolition of compulsory vaccination. Under his masterly and untiring leadership the movement grew to great proportions, and in 1889 a Royal Commission was appointed which took about six years to study the subject in all its phases and render its report. The report was unfavorable to the compulsory feature of vaccination, and in August, 1898, a law was passed which provided that during five years it should be possible for the objectors to vaccination to save their children from it by announcing their objection to a magistrate before the child is four months old. It was said in Parliament during the debate on this measure that about one-third of the children born, already escape vaccination, and a few months' experience under the new law made it appear likely that less than one-third of children born from that time on, would be subjected

to voluntary vaccination. The vaccinists, of course, regard this as a very dangerous experiment, while the objectors, of course, expect that it will prove so satisfactory to the mass of the English people that it will be made permanent after the five years of trial. The results of this experiment in England will, no doubt, in the course of time, influence legislation and the action of Health Boards all over the civilized world, and especially in the United States.

For many years arm-to-arm vaccination had the preference, because the local sores thus resulting were less liable to take on severe forms, but as it became generally known that other diseases might be also transmitted, including syphilis (many hundreds of cases are on record), and leprosy, the profession, for the sake of allaying popular prejudice, favored "bovine virus," that cultivated on the abdomen of calves in farms conducted with a view to provide a safe and "pure virus;" but the most competent students of the matter are obliged to admit, as Dr. Klein has done in an official report, that they cannot recognize in any virus the precise elements (microbes, probably) which they presume to be useful, while mixed colonies of undesirable bacteria have been observed in "points" obtained from all "reliable" sources of supply in the United States, as stated by Surgeon Walter Reed of the United States Army in the *Journal of Practical Medicine* for July, 1895. High authorities among the advocates of vaccination could be quoted to show their admission of the possibility of as many as twenty-two complications resulting from vaccination, including nine forms of skin disease, erysipelas, tuberculosis, leprosy, and syphilis, though it is claimed that instances of the three latter are rare, and can arise only from the use of "humanized virus," and that erysipelas and other serious local "accidents" need not occur if a pure animal lymph is used with sufficient care—at least, so says Dr. George F. Shrady, editor of the *New York Medical Record* (June 15, 1895); and if his position be tenable, it is fair to say that the frequency of the occurrence of serious and crippling complications of vaccination, and the occasional deaths directly traceable to it, offer damning testimony against the care and expertness of the vaccinators and the *purity* of the virus they use. I am not disposed to lay more than half the blame of accidents, risks, dangers, and complications upon careless operating, fully believing that with the utmost care, some proportion of vaccination would turn out badly, and some deaths occur.

There has been a great deal of difference of opinion among vaccinators as to the best way of preparing a virus and applying it, and the variations in practice have been so numerous that the meaning of vaccination has varied greatly with time and place. In the English parliamentary debates on the law of 1898 great claims were made for what was offered as a new style of virus compounded with glycerine,

and about this date many Health Boards in the United States were adopting this kind of virus, although not long before, an authority on vaccination had called it "a preposterous adulteration." The main claim for it was that it was sterilized of all other germs but the one which imparts vaccination. But the *Sanitary Review* (English) of March, 1898, said: "Laboratory workers have about come to the conclusion that it is at present impractical to produce a sterile vaccine. The results of the use of this so-called germ-free-lymph have not secured freedom from the inflammatory complications of vaccination. On the contrary, it is the general testimony that inflammatory reactions occur in about the same proportion of cases as before this lymph was introduced." A German official report on vaccination for the year 1894 tells of eleven deaths from this glycerinated "what-is-it," and a circular of the New York Board of Health cautions those who use it not to expect entire avoidance of inflammatory complications. It therefore appears that there is no safe and pure virus, and that anyone who claims that there is, is either talking ignorantly or mendaciously.

The history of vaccination shows great changes of opinion among its most ardent supporters, and never any unanimity of opinion as to very important practical points, so that there are generally as many contradictory opinions regarding its essentials as there are about religious creeds; and yet the one claim that most of them are agreed upon is that vaccination is so great and good a method of protection against small-pox that it is above criticism, and that its utility is so thoroughly settled as to be beyond dispute.

Mr. Alexander Wheeler, in an article entitled "A Changing Medical Dogma," written December, 1893, reviewed the history of vaccination from its origination by Jenner to the last statement which had then been made from the side of those favorable to the practice, by Dr. Guy, a statistician, as well as a vaccinator, who wrote for the *Statistical Society's Journal* a *résumé* of two hundred and fifty years' history of small-pox. "Taking," concludes Dr. Guy, "a careful and comprehensive view of all the facts that bear upon the question, it is allowable to conjecture that while vaccination does not act as a sufficient protection in epidemic years, it does effectually guard against attacks of small-pox in all other years, and that where it does not protect it mitigates." If, in the opinion of one favorable to vaccination, it is "merely allowable to conjecture" these small benefits from its practice, we unhesitatingly affirm that its known dangers far outweigh its doubtful benefits; but let us quote, after Dr. Guy's feeble apology for the continuance of the practice, Mr. Wheeler's brief review of the gradual modification of opinion favorable to vaccination. "Thus we find," says Mr. Wheeler, "the original dogma, that one vaccination protects absolutely for life; the doctrine of 1804, that it protects with exceptions; doctrine of 1809,

it gives as much protection as small-pox itself ; doctrine of 1818, it does not protect absolutely, but modifies the disease ; doctrine of 1868, it requires repetition, as it wears out (the doctrine of many marks, the more the merrier) ; doctrine of 1877 (Grayton), 'a repeated vaccination after a certain age confers an almost absolute protection ;' doctrine of 1881 (Guy), 'it is allowable to conjecture,' etc. Mr. Wheeler asks, "May I not be permitted to think that a confession of absolute failure must before long close this series ?"

Two of the most effective contributions for dispelling the vaccination delusion have been the writings of Professor E. M. Crookshank, M.D., of King's College, London, and Dr. Creighton. Both made original, deep, and thorough investigation of the subject, and have expressed themselves decidedly opposed to it in works whose scientific facts and arguments have not been disproved.

Professor Crookshank's work on the "History and Pathology of Vaccination," in two volumes, scientifically demolishes the theoretical foundation for vaccination, and exposes the insincerity, incapacity, and vacillation of its founder, Edward Jenner. Dr. Creighton, in the last edition of the great "Encyclopædia Britannica," and in special books, demonstrates the fallacy of the statistical or practical experience basis of vaccination, so that now it has no demonstrable value except what it is worth in fees for the doctors, business profits for vaccine farms, public jobs for health (?) officials, and other incidental interests.

While those who do have faith in vaccination, and desire to employ it, should have every facility for doing so, no one should be compelled by law to submit to its employment. The argument that the State may make it compulsory for the protection of the community at large loses all its value in the face of the allegation of pro-vaccinationists that vaccination affords absolute protection, for the penalty for refusing the alleged boon will only fall upon those who resist it, while those who meekly accept, according to its advocates, will be exempt from the danger of contracting small-pox. Under such regulations it would not require many years to demonstrate which party is in the right. In the present state of uncertainty, compulsory vaccination is an outrage.

Space cannot be spared here for further discussion of the claims for and objections to vaccination, but those seeking fuller information can find it in several interesting books and pamphlets, free from technicalities, and suitable for the general reader. A list of such publications can be had from the office of *The Vaccination Enquirer*, published monthly at No. 4 Ave Maria Lane, Paternoster Row, London, E. C., England. The publishers of this book are prepared to offer a dime pamphlet on "Bacteria," a discussion of the germ theory of disease, by Dr. E. B. Foote, Jr., and several handy, cheap tracts for distribution by those who wish to fight off compulsory vaccination laws.

**Adulterated Medicines.**

That man's cupidity should so far transcend his native humanity as to lead him to imperil the lives of thousands of his fellow-beings by the base adulteration of those things to which the sick resort for relief from their physical sufferings, thus depleting their pockets simultaneously with corrupting the vascular and nervous fluids of their already enervated systems, is a fact almost sufficient, one would suppose, to destroy what little confidence men do entertain in the integrity of each other.

The extent to which the adulteration of medicines is carried is truly surprising. Says Normandy: "Adulteration is a widespread evil, which has invaded every branch of commerce, everything which can be mixed, or adulterated or debased in any way, is debased." There is, indeed, better opportunity for adulteration of medicines than of foods, and more temptation because of greater profits in such fraud. All adulteration is not necessarily directly injurious, since much consists in merely weakening the proper article with some inert substance, but this spoils the physician's reckoning as to dosage, and is responsible for much of the disappointment in medical practice. Whenever State officials make their rounds they discover many inferior samples.

A writer remarks that "more than half of many of the most important chemical and medicinal preparations, together with a large quantity of crude drugs, come to us so much adulterated, or otherwise deteriorated, as to render them not only worthless as medicines, but often dangerous."

Nearly all kinds of vegetable medicines, such as sarsaparilla, yellow dock, elder flowers, uva ursi, rhubarb, Iceland moss, and other useful roots and herbs which are thrown into the medicine market, are either adulterated in such a way as to elude the detection of those unacquainted with the botanical description, fragrance, and flavor of the pure articles, or have been rendered inefficient by being gathered at the wrong season of the year. To secure absolute purity and strength I have my own private laboratory, with a pharmacist who has been in charge of it for nearly thirty years, and here all my preparations are carefully prepared from material gathered from the most reliable sources and submitted before used to a careful examination. Expense is never considered in obtaining the very best material that can be had.

FIG. 77.



THE HAND THAT DOES IT.



It is impossible for a physician to predict, with any certainty, the effects of a prescription upon a disease, if it be prepared from the ingredients furnished by most medicine dealers, however honorable, for if they do not themselves practise adulteration, those of whom they purchased may have done so, and the worthlessness of any root or herb cured in the wrong season, can only be determined by a trial of its strength. "Upwards of one hundred persons," says a newspaper writer, "are fatally poisoned in New York City every year through the practice of druggists of substituting one drug for another, either by mistake or to increase profits."

Those who reside in the country, surrounded with the numerous antidotes which Nature furnishes for the diseases of mankind, might easily avoid this species of imposition, and do much to preserve and restore their own health, by acquiring a little knowledge of the medicinal properties of the numerous plants springing up about them, and preserving, in their season, such as are valuable in sickness. It is true that adulterations in roots and herbs are not so positively injurious as those of mineral medicines, which I shall soon consider, but time is too valuable in sickness to be trifled with by the administration of medicines of an uncertain efficacy.

Those living in cities might more safely employ physicians who supply the patient with medicines prepared by their own hands or under their personal supervision.

The Botanic System of practice has not gained that high reputation for success which it would have attained had its practitioners been their own botanists, and gathered by their own hands, or by those of agents of integrity and ability, *in their season*, the many health-restoring plants which they rely upon in the treatment of the sick.

The industrious farmer knows how difficult it is for him to buy as good corn, potatoes, eggs, and butter in the city markets as he can raise himself. Now, it is just as difficult for the botanic physician to purchase at random, at the medicine stores, as efficient medicines as he can collect through private sources with a little extra trouble and expense.

I have cured hundreds of cases of difficult chronic diseases with botanical medicines *bearing the same name* as those the invalids had been using for weeks and months without benefit, under the direction of other physicians, which fact can only be explained by the supposition that adulteration, or carelessness in curing, had been practised upon those administered by my medical contemporaries.

There are, of course, some medicinal vegetable productions of foreign countries which we can only get by importation. Nearly all are generally more or less adulterated, which fact should lead the careful physician to double diligence. Indian opium, for instance, is often

adulterated with mud, sand, powdered charcoal, soot, *cow-dung* (hold your stomach, opium-eater)! powdered poppy-petals, and powdered seeds of various descriptions. Smyrna scammony frequently contains chalk, guaiacum, jalap, sulphate of lime, gum tragacanth, bassorin, etc., and some samples are met with which do not possess a particle of that drug which it is pretended to represent. The Mexican jalap is of two varieties, one of which is almost worthless. The latter is called male jalap, and often comes mixed with the better article, and sometimes unmixed. The Spanish licorice is also much adulterated. Hassall found in twenty-eight samples of the powdered, *eleven* which were adulterated, and the extract can seldom be obtained pure.

## ADULTERATIONS OF MINERAL MEDICINES.

When so much injury results from the adulteration of vegetable medicines, what shall be said of those arising from the adulteration of mineral medicines, whose counterfeits are often more pernicious in their effects than the genuine? According to Normandy, Bingley, and Wakley, calomel is adulterated with chalk, sulphate of barytes, white lead, clay, sulphate of lime; mercury with lead, tin, bismuth; mercurial ointments with Prussian blue, clay, etc.; nitrate of silver with nitrate of potash, and so on through the whole catalogue of mineral remedies.

While writing this the New York morning journals inform their readers that E. W. Martin, Chief Inspector of the Health Board, has discovered that phenacetin, a coal-tar preparation much used as an antipyretic, has been imitated. The newspaper reporter says: "One chemist examined two hundred samples of what was sold for phenacetin, and found in many cases a spurious drug had been used. A common substitute was acetanilid for phenacetin. Starch, sugar, bicarbonate of soda, chalk, and citric acid were also used in place of phenacetin."

Why, the disclosure of this wholesale deception in drugs and medicines is enough to make a man see red and blue lights in the apothecaries' windows, if all the "big bottles" of colored fluid were taken out. It is no wonder that the patients of old-school physicians make ugly faces at their family doctors, and call them hard names. Mineral doctors, under the most favorable circumstances, are unsuccessful enough, without having their already uncertain remedies perverted.

As a general rule all internal medicines, whether vegetable or mineral, are potent for good or evil. They seldom have a passive effect, but a positive or negative. It is all-important, therefore, that they should be just what the prescriber supposes them to be, or serious mischief must necessarily occur. Although the records of crime indicate that mankind places a trifling estimate on human life, its most depreciated value is quite too great to warrant the carelessness which is

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often manifested in the preparation and administration of drugs, particularly when the extent to which adulteration is practised is so widely known among the intelligent members of the medical profession. One of the secrets of my success lies in the fact, that I spare neither labor nor expense in obtaining the best things from the vegetable kingdom that mother earth furnishes for the ills of mankind—and I can say too, that they are prepared in a laboratory with facilities second to none in this or any other country.

### Brutality and Inhumanity.

Shocking instances of brutality and inhumanity are constantly straining the nerves of all good people, and affecting to a frightful degree those who are finely organized physically. Some people delight

FIG. 73.



AS ILLUSTRATION.

in whipping horses; others in kicking dogs; and there are those who cannot pass an animal of any kind without hitting it with stick or stone. Almost everybody seems to enjoy to some extent the destroying of life. Boys, for the mere fun of the thing, catch flies in order to kill them. Very bad boys delight in putting pins through insects, and fastening them to boards to watch their painful writhings and dutterings. Older boys and men find pleasure in shooting little birds, rabbits, squirrels, and other pretty animals which beautify and enliven the landscape. Very bad men enjoy pummelling and killing each

other. In brief, nearly all men possess the impulse, to some extent, to destroy life. It is small in those who simply like to step on worms, pull the wings from flies, and catch and torture the busy honey-bee; but at the same time this is one of the worst and most inexcusable exhibitions of the impulse. It is larger in those who can entertain themselves for days and weeks with guns on their shoulders, searching wood and stream for something to destroy, merely for the pleasure of taking life. It is tragically enormous in men who delight in the carnage of war; who boast how much they like to fight; and who can look with dandish complacency upon the bleeding form of a brother slain; but it presents the dimensions of a fiend incarnate, and a power incomprehensible even to those we commonly esteem as bad, when it compels a man, in the absence of any serious provocation, to murder a large family, as illustrated in the case of Probst. As I see the wasp, ever ready to inflict his sting; as I read of the serpent, ever alert for an object into which he may fasten his poisonous fang; when I am told by the traveller of the blood-thirsty habits of the tiger, the panther,

and other animals of our class. I sometimes think that this disposition to inflict pain and destroy life, is, in a measure, derived from man. Man fills the whole animal world with magnetism bearing more or less of his qualities of mind and disposition. Place a good man for awhile in the magnetic atmosphere of those who are bad, even if the latter be mute or asleep, the good qualities of the former will be, in a measure, modified. No one can habitually live in the atmosphere of cruel people without being to some degree contaminated. There are places which good men cannot enter without having their moral nature somewhat injured. Now if men are so under the influence of their fellow-men, may not the inferior animals also be affected by the moral atmosphere of mankind? We find where men are the most savage, most brutal, and most given to the pastimes of torturing and killing, that there, too, animals of all kinds exhibit the most blood-thirsty instincts. The same animals removed to regions of civilization, and among men of greater kindness of feeling, lose very much of their savage disposition; and, too, these ferocious animals are often subdued by the presence of one noble, generous man. All successful tamers of ferocious animals, as well as our best horse trainers, are men of kind hearts. It is impossible to subdue the tiger with a club, or a vicious horse with a whip; and may it not be that the promised millennial era, "When the lion and the lamb shall lie down together," will make its advent on earth so soon as man shall have subdued all his cruel passions—so soon as he shall recognize the rights of animals of every grade to exist and enjoy life—shall love his neighbor as himself—and shall love everything that creeps upon the earth, because they are his fellow-creatures.

The health of the nervous system of many good people is, as it were, sacrificed by their being compelled to witness cruelty to animals. The more sensitive are shocked at cruelty to insect life; but all noble souls tremble in their nervous centres when they see horses lashed, dogs kicked, and other animals rudely treated. No really generous, kind-hearted man can see the songsters of the forest, and the quadrupeds which enliven wild and uninhabited resorts, shot down from pure wantonness, without a feeling detrimental to the nervous harmony.

#### MAN'S INHUMANITY TO MAN.

Inhuman conduct between man and man, however, produces the greatest discord in the nervous system. It not only affects injuriously the perpetrator and victim of the cruel act, but it convulses the nervous systems of those who witness it, and those in the radius of thousands of miles, who may read, or be told the affecting tale. Burns, ever glowing with sympathy, never uttered truer poetic words than those in which he said:

"Man's inhumanity to man  
Makes countless thousands mourn."

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It is shamefully the rule, instead of the exception, that men, created, as we are told by Christian teachers, in the image of God, do not treat each other more kindly. Selfishness abounds everywhere, and constantly generates a spirit of inhumanity. This, in turn, leads to acts of cruelty, and when these culminate in murder, then again we witness the inhumanity of scores of people gathering in mobs to be revenged upon the unfortunate murderer; and the law, through its officers, jealous of its inhuman prerogatives, protects its victim, not only from the ferocity of the mob, but with stomach-pump takes from the wretched man the poison he has swallowed, in order that it may have the satisfaction of putting out his poor life; and when he has sufficiently recovered from this attempt upon his life, he is conducted, tremblingly, to the guillotine, the garrote, the scaffold, or electric chair! Readers, not one in ten of you have stopped to consider the moral and physical injury the human family suffers from the inhuman practices of beheading, choking to death, hanging and electrocuting those who, through unfortunate mental organization, or more unfortunate circumstances, commit murder or other crime. The effect upon the child, and in fact upon all, is to create the impression that murder is justifiable, if the provocation is what the law regards a capital offense; and the result is that many people, impatient of the law's delay, take, as they say, the law into their own hands, making themselves judge as well as executioner. This is true, not only of mobs organized to lynch and kill some offender, but often of individual action. A man feels himself aggrieved by the supposed or real injustice of another and thinks his injurer ought to be killed; and fearing or knowing that it cannot be effected by due course of law, he does the bloody work himself, after arraigning the accused before his own excited imagination, and pronouncing sentence of death upon him. Now, if law will not countenance killing for any cause whatever, will it not have a healthful effect upon the passions of men who are now taught by its example that killing is right under certain circumstances, and by methods prescribed by law, and who, consequently, convinced in their heated judgment that some enemy of their happiness should be killed, proceed at once to do the murderous work? Would it not be far better to teach our children, as they are growing up, impressible and easily moulded, that no one, ruffian or sheriff, has a right to slay his fellow-man.

Should not the law be made a good exemplar, in order that immature minds may be correctly formed, and those which have received the development of adult age, impressed with the sacredness of human life. There is no difficulty in placing the murderer where his existence will no longer be dangerous to society. Let it be the law, if necessary, that men guilty of capital offenses shall not be pardoned by President, by governors, or other officials, and we may safely await the natural

processes of nature for their final removal. So long as the law recognizes murder as necessary in some aggravated cases, individuals will entertain the same sentiment and act upon the conviction. While writing, my eye falls upon a newspaper containing the following paragraph, dated at the office of Wells Fargo & Co., San Francisco: "San Juan and Nevada stage robbed at four A.M. of \$2,000; reward offered at seven A.M. robbers shot and all the money recovered at two P.M.; coroner's inquest at three P.M.; funeral of the thieves at six P.M. The foregoing programme of a 'spiced little affair,' came off on the 15th of May. First part of programme not so pleasant as the last." Of course all of this must have been done under the law of Judge Lynch, and as the newspaper seemed to regard it as a cute way of disposing of such matters, it is presumable that public sentiment also approved of it. With this and other precedents in mind, somebody will shoot his neighbor for invading his orchard; some lover send cold lead into the heart of his rival; and some fellow in a barroom brawl, plunge the fatal knife into the breast of his adversary; for each one feels that the object of his dislike should be speedily put out of the way, and that killing is not, in all cases, morally and legally wrong. This conclusion is borne out by what is actually transpiring. In 1907 there were 167 lynchings in States which uphold the death-penalty, and *not one in those States which have abolished capital punishment.* And it can be further added that more murders are committed in Massachusetts where the death-penalty is rigidly administered, than in Wisconsin where it has been for several years abolished. People laboring under violent passion seldom pause to consider consequences; while, as before remarked, the fact that public opinion and the law approve the taking of life in some cases, affords them an excuse for so doing, for they frantically imagine, for the moment, that there never was so great a provocation—never a better cause for the adoption of extreme measures.

#### THE DEATH-PENALTY MUST GO.

The death-penalty, happily, is becoming unpopular, though too slowly. In the earlier period of man's history, a murderer was pursued and slain by the friend of the murdered man. The early Hebrews punished blasphemy, disobedience to parents, desecration of the Sabbath, idolatry, witchcraft, and many other misdemeanors, with death. The Athenians considered people guilty of open disrespect for religious rites or popular faith deserving of the death-penalty. From those earlier periods to the present time, public sentiment has been slowly, but steadily, undergoing a wholesome change, and laws have, accordingly, been made more humane. It is only about one hundred years since a woman was hung on Boston Common for snatching a bonnet and reticule from a lady on one of the streets leading from Fort Hill,

It was pronounced a clear case of highway robbery, upon which charge she was convicted, and for which the penalty was death. To-day, in most of the States of the Union, only treason, murder, and homicidal arson are visited with death.

The death-penalty, according to General N. M. Curtis was abolished in Michigan in 1847; Rhode Island in 1852; in Wisconsin in 1853; and in Iowa in 1872. Let us hope that in time every state in the

FIG. 79.



GENERAL N. M. CURTIS,

Who justly won military distinction during our Civil War, but who has achieved still higher honors in peace by his persistent and able advocacy of the abolition of the death-penalty in the Legislature of the State of New York and in the Congress of the United States.

of civilization, and have done away with the hideous practice of killing murderers. Since taking this humane step, *homicidal crimes have actually lessened in frequency within their borders*. Russia, since the reign of Catherine II., has not applied the death-penalty for any crimes excepting those of a political nature. In our own country we have been greatly indebted to General N. M. Curtis for the progress made in the abolition of the barbarous custom. During the seven years he was a member of the New York Legislature, he introduced a bill at every annual session, having that object in view. Twice the bill passed

Union will follow their humane example. In Kansas a death-sentence must have the approval of the Governor to be effective, and if he withholds his sanction the culprit is sent to the State prison for life. During the last year of the nineteenth century Kansas had a Governor who was opposed to the death-penalty, and consequently a man convicted of the crime of murder by a jury of his countrymen went quietly to the State prison instead of being used for a dramatic and tragic show and thereby shocking the sensibilities of the entire community. The name of this enlightened Governor was W. E. Stanley. All honor to his humanitarian character and wisdom, and his appreciation of sanitary science. May Kansas have many such governors.

If we cast our eyes abroad we find that Switzerland, Holland, Belgium, Tuscany, and Portugal have kept pace with the advance



the Assembly, but did not receive the approval of the Senate. Public opinion, in the estimation of many, is not yet ripe for sustaining the measure. While a member of Congress General Curtis succeeded in securing the passage of a bill limiting the death-penalty to three crimes, and doing away with its execution for eighteen offenses. Under existing National statutes the death-penalty may be inflicted for murder, rape, and treason, unless the jury adds to its verdict—without capital punishment. Before this change was made in the National penal code, the laws of the United States were the most barbarous of any nation in the world!

General Curtis's humanitarian work has been greatly aided by the voice and pen of General Stewart L. Woodford, William D. Howells, Elizabeth Cady Stanton, Colonel Robert G. Ingersoll, Hon. Thomas B. Reed, Dr. Ecob, A. Jacobi, Alexander Wilder, E. Park Lewis, George F. Shrady, and many others whose names I cannot at this moment recall. Of those in the earlier years of the Republic who have left a record of their opposition to the death-penalty, may be mentioned Benjamin Franklin, Thomas Jefferson, John Quincy Adams, Benjamin Rush, Edward Livingston, and later, Governor J. A. Andrew, Reverend Theodore Parker, Governor William H. Robertson, William Cullen Bryant, John G. Whittier, Alice Cary, Henry W. Longfellow, Horatio Seymour, Horace Greeley, Charles A. Dana, Charles Sumner, Henry Ward Beecher, Wendell Phillips, M. H. Bovee, Roscoe Conkling, Father Mathew, and other eminent men and women whose names are entitled to the homage of their fellow-men. Abroad, the opponents of the death-penalty have been Pericles, the Athenian, Cicero, Cesare Boncenna Beccaria, Voltaire, Elizabeth of Russia, Victor Hugo, Wilberforce, Dr. William Paley, Sir Thomas More, General Lafayette, Lamartine, Jeremy Bentham, and doubtless many others.

MEDICAL SOCIETIES OPPOSE THE DEATH-PENALTY.

The medical societies, recognizing the evil effects of cruel and barbarous punishments upon public health, have taken the subject up, and two of them at least have passed resolutions in opposition to the infliction of the death-penalty. The Eclectic Medical Society of the State of New York, at its annual meeting in 1893, put itself on record with the following resolutions, which were two of six bearing upon the subject:

*Resolved*, That when the death-penalty is inflicted, it is the community rather than the culprit that is punished. Sensitive minds and delicate nerves are greatly and injuriously shocked by the tragic event and the reports thereof that inevitably appear in the press, while the victim of the barbarous usage goes out quickly, even though shockingly, and is soon oblivious to the circumstances which for days, weeks, and

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possibly years, haunt the minds of those who are endowed with humane attributes.

*Resolved*, That when the penalty of imprisonment is inflicted upon one who has taken the life of another, the punishment but justly and naturally falls upon the one who most deserves it, and the public is spared the painful recitals following the infliction of the death-penalty. He is silently, and without the inevitable excitement attendant upon executions, conveyed to his living tomb.

See how quietly the assassin of the Empress of Austria was disposed of in Switzerland in the autumn of 1898.

The fifth resolution recommends the Legislature of the State of New York to substitute imprisonment for life for the present method of punishment in such cases. The Homeopathic Medical Association of the State of New York also passed resolutions in favor of the abolition of capital punishment. The Allopathic Society had the same subject under discussion, with what result I have not been informed.

This subject should receive the careful attention of physicians and sanitarians. General Curtis informs me that the tragic reports of the hanging of the Chicago anarchists caused forty gravid women to become insane! Think of the effects of this tragedy upon not only these expectant mothers, but upon the unborn child! Under the influence of prenatal impressions what evils must have happened to the children of these women. Some of them doubtless heirs to insanity or idiocy; others marked with tendencies to crime. Try, if possible, to measure in the imagination how greatly these tendencies will be handed down through succeeding generations, bringing an inevitable blight upon their posterity. Are we not shocked and made sick enough by the violence of badly constituted men and women without having the State contribute such shocking examples?

It is becoming a serious question if criminals should be punished for the especial purpose of inflicting suffering upon them for their violent acts; whether indeed, they should not be treated in the same manner as the dangerously insane are cared for. In an address at Geological Hall, in 1892, on the "Relation Between Crime and Disease," which received considerable favorable comment from the press, I took the position that it is as natural for some people to commit crime under great provocation or extraordinary temptation as it is for a consumptive to contract a cold or cough with exposure; that, too, we have mental monstrosities as well as physical deformities; that we have those with us who are as unfortunate in their mental make up as others are in their physical conformation. In brief, that the hump-backed, rickety, club-footed, and knock-kneed have their analogues in those who are no less mentally deformed, and that society should simply seek to have the latter segregated instead of being punished or killed. This paper

may be found in the "Transactions of the Eclectic Medical Society of the State of New York," Vol. XV., p. 328 *et seq.*, where this phase of the subject is treated at considerable length.

"The facts collected by Lombroso," says Helen Zimmern in *Appleton's Popular Science Monthly*, "place beyond all doubt the intimate connection between crime and mental derangements which has so long been suspected to exist. Madmen and criminals belong to the same family; not in the sense of the vulgar and unthinking expression that all criminals are mad, though every-day experience in the police courts puts it beyond doubt that many are actually deranged, but in the sense that both classes are in a similar pathological state, which manifests itself on the one hand in lunacy, on the other in crime. This position is rendered still stronger by the revelations of genealogical statistics, which reveal the heredity through long generations of criminal tendencies, as they do of insanity, and alternations of criminals and mad men, in the same or successive generations."

When this view of crime shall be generally accepted by our law makers, the death-penalty will not only be abolished, but the unfortunate classes will be more humanely treated than they now are as prisoners. All that society will ask will be the removal of such mischievous people from their more fortunately organized neighbors, and their retention where they cannot annoy peaceable and law abiding citizens.

Perhaps when as much thought and attention shall be given to stirpiculture as is now bestowed on the rearing of improved specimens of domestic animals, the unfortunate classes may be saved from taking passage to this beautiful planet. The world moves, though on some lines painfully slow. Our social advancement is far from keeping pace with our material improvements. When the works of the botanist, Linnæus, were burned because they treated of the sex of plants, there could have been little progress made in the culture of flowers or trees. So long as it is considered obscene to instruct the human family in regard to the true functions of the sexual organs, and all that legitimately relates to physical, mental, and temperamental adaptation in parentage, progress in race culture must necessarily be greatly retarded.

#### IS THE DEATH-PENALTY A DETERRENT?

In regard to Wisconsin, Governor Washburn, when occupying the executive chair, said: "It is twenty years since the abolition of capital punishment. No State," he added, "can show a greater freedom from homicidal crime." Crime decreased instead of increased with the growth of the State. The statistics of Rhode Island bearing on this matter are equally favorable to the abolition of the death-penalty. They show in all the States that have done away with these barbarous methods that convictions are more easily obtained, and that

a far less number of capital crimes are committed within their boundaries as compared with contiguous States wherein the death-penalty hangs mercilessly over the head of the murderer. The difficulty in convicting those who are charged with murder under the existing statutes in the majority of States is illustrated in the following facts gathered by General Curtis :

FIG. 80.



THE ELECTROCUTING CHAIR.

In 1885 there were 1,808 murders, only 108 executions, while there were 181 lynchings. In 1886, 1,499 murders, only eighty-three executions, and 133 lynchings. In 1887, 2,333 murders, seventy-nine executions, and 123 lynchings. In 1888, 2,184 murders, eighty-seven executions, and 144 lynchings. In 1889, 3,507 murders, ninety-eight executions, and 175 lynchings. A little over three per cent. of the murderers are legally executed, while the efficiency of Judge Lynch's court seems to be from two to three times as great. It is worthy of note, that Judge Lynch's proceedings are wholly carried on within the limits of capital States."

Those who have given attention to the subject are impressed with the conviction that the death-penalty has no deterrent influence upon the criminal

mind. "The pretext of warning," says Professor Alexander Wilder, M.D., "is gossamer. The experience of England demonstrated that the more capital punishment was resorted to, the more occasion was found for it. Indeed, the severest courts and the most rigidly enforced penalties are found on pirate ships, yet we hardly look to such a community for personal security. There is something in the familiarity with bloodshed that maddens men to be murderers. \* \* \* Children reading or hearing particulars of an execution imitate it in their play. Men attending such an occurrence are maddened and made murderous in temper. This fact has led to the executing of men in private with only witnesses enough to make sure that the work has been properly done. Yet if it were so holy, so religious, so necessary for an example the logic is inevitable that executions ought to be public and that every

man, woman, and child ought to be encouraged, if not forced, to attend them for the sake of the moral influence."

Cicero said: "Away with this cruelty from the State! Allow it not, O judges! to prevail any longer in the commonwealth! It has not only the fatal effect of cutting off so many of your fellow-citizens in a most atrocious manner, but it hath even banished from men of the mildest disposition the sentiment of mercy by the familiar practice of slaughter."

And Victor Hugo, in a speech in the National Assembly, exclaimed: "What is the death-penalty if not the special and eternal sign of barbarism? Wherever capital punishment is frequent savagery predominates; wherever capital punishment is rare civilization reigns."

In a letter to the English poet, William L. Linton, John G. Whittier said: "I have given the subject of capital punishment much consideration, and have no hesitation in saying that I do not regard the death-penalty essential to the security and well-being of society; on the contrary, I believe that its total abolition, and the greater certainty of conviction which would follow, would tend to diminish rather than increase the crimes it is intended to prevent."

In New York it was attempted to exclude from the daily press all descriptions of the events of the death-chamber when the electric chair succeeded the gallows. This was found to be impracticable, and the reading public is served up with a chapter of horrors whenever a condemned man is shocked to death. It seems difficult for the mind of man to devise any means of killing criminals humanely. Electricity is clearly a disappointment, and those who are called to witness the execution by this method are nearly shocked to death themselves by the contortions of a fellow-being strapped to the chair while the painful current is doing its murderous work. Better than this plan would be to put the unfortunate man in a car and sink it to the bottom of a river, as the pound-master used to drown dogs, for we should at least be saved the horror of beholding the victim in his last agonies! But there can be no humane or elevating device for perpetrating judicial murder.

When statute law ceases to provide physical torture as a punishment for crime, we may reasonably hope to see less cruelty exhibited by man toward his fellow-man, and to the lower orders of animal life. Remove this barbaric example from high places and the influence will be humanizing to the entire race; and with this regeneration of man, even the ferocity of beasts will ultimately be subdued by the magnetic power of benevolence and fraternal love. This is not too much to hope for by those who really believe in the predicted millennium; but let us not lose sight of the sanitary motive for reform in this particular. Let every one remember that all cruelty, and all inhumanity is not only felt by the victim thereof, but by all good men and women who are

cognizant of the violence or unkindness, and that their nervous systems are seriously impaired by all that is commonly and correctly denominated "Shocking," and that the perpetrator suffers physically, to some extent, in consequence of the allowed presence of the passions which instigate him to commit the offense. Let me also add that it would greatly conduce to health of nerve if people of delicate organizations would suppress the morbid taste or curiosity which leads them to witness a stage or real tragedy ; which makes them attentive readers of a tragical story, or accounts of actual murder ; which induces them to apply to the sheriff for permission to witness the dying convulsions of a convicted murderer, or fly to the newspaper for the harrowing description of the last moments of the condemned man. Let us rather try, so far as possible, to turn away our eyes from the bloody acts of depraved human nature and barbaric laws, and thus preserve our nerves in tranquillity while watching and applauding the examples of the good, and trying to make kindness of heart a quality of earnest and universal aspiration.

#### Wealth.

Wealth, with its attendant dissipations, is a prolific source of nervous derangements and blood impurities. Many physiologists have described money as the "elixir of both mind and body." Dr. Hall, in his *Journal of Health*, remarks as follows :

"This idea of the hygienic value of money on men is strikingly illustrated in the report of M. Vallerme, secretary of the poor-house commissioners in Havre, where the average age of the rich is twelve years greater than that of the poor. Thus, 1,088 prosperous persons died at an average of forty-two years ; 4,791 of the middling classes at twenty-nine years ; and 19,849 poor at twenty years."

Now, these statistics, at first glance, look like "knock-down arguments" ; but those who argue from them that wealth is a promoter of health and longevity, overlook one important consideration which strikes at the very root of their philosophy, to wit : *health begets wealth, instead of wealth begetting health*. It must be remembered that a large proportion of mankind is born into the world with hereditary disease or enfeebled constitution, which disqualifies them for the active pursuits of life, and consequently, unless they become heirs to wealth they must live and die poor. Look over our country now, and learn the history of its wealthy men ; what do we find ? Two-thirds at least have been the architects of their own fortunes. They have amassed their wealth by that indomitable perseverance and industry which they could only have maintained under the encouragement of vigorous physical organization. What chance has the invalid to gain wealth, or even a competency ? He is interrupted in his business pursuits by the



violations of disease, and the increase he may reap during the intervals of comparative health are at once absorbed in the expenses of sickness which follow. If in the statistics indicating the average age of wealth over poverty is only twelve years, the argument is in favor of the latter; for if with good health it starts with, and subsequent wealth so enable them to live as they choose, men people cannot exceed an average of twelve years over a time a majority of which is lost in sickness and physical debility, we may justly conclude that wealth, with its usual dissipation, shortens the lives of its possessors. Dr. Hall has fallen into the same error that many other physiological writers have in treating of this subject.

Men who have been gifted with that mental and physical energy united with extraordinary powers of endurance, which has enabled them to stem with success the opposing currents of life, ought to live from twenty to fifty years longer than the sickly crew who follow in their wake with spindled oars to-day, and exhausted strength to-morrow. But it appears they can only average twelve more, and probably these are obtained from the extraordinary longevity of the minority of wealthy men, who have attained remarkable age in consequence of an adherence to temperate and industrious habits, unallured by the vices of wealth.

A few men use riches as if they were a loan from the Deity, strewing the paths of indigency and suffering with blessings; many men value riches only because they enable them to live in sluggish idleness—to glut their bellies with besotting wines and rich viands—to gratify in full measure their stimulated passions, and dazzle the world with glittering gew-gaws. The former possess placidity of mind and harmony of body; the latter, mental uneasiness and physical debility, and from the dissipations of these arise the common evils of wealth. The mind, under constant excitement, the blood hot with excessive stimulus, and the muscles paralyzed with habitual inactivity, cannot fail to destroy the tone of the nervous and vascular systems.

There is a happy medium between wealth and poverty, which promotes physical health and social comfort, and beyond this boundary it were well if none could pass. Inasmuch as man can carry nothing with him at the close of life except a record of good works, he who possesses a competency during life enjoys all the pleasures that money can buy, without surfeit. But some wish for wealth to be enabled to do good. An excellent lesson for such may be found in the life and

FIG. 2.



BORN OF PLENTY.



sayings of Socrates : A Grecian youth, who saw the errors and follies of the people, and wished to reform the world, exclaimed : " Oh, that I were rich, and famous as an orator, I would move the world so soon ! Here are sins to be plucked up, and truths to be planted. Oh, that I could do it all ! I would reform the *whole world*—and that so soon ! " Socrates, hearing the youth, said : " Young man, thou speakest as silly women. This gospel in plain letters is written for all—'LET HIM THAT WOULD MOVE THE WORLD, MOVE FIRST HIMSELF.' It asketh neither wealth nor fame to live out a noble life. Make thy light thy life ; thy thought thy action. Others will come round, and follow in thy steps. Thou askest riches to move the world. Foolish young man, as thou art, begin now. Reform thy little self, and thou hast begun to reform the world. Fear not ; thy work shall never die."

The general tendency of wealth is not benevolence, but prodigality, selfishness, idleness, and gluttony. There is more true benevolence exhibited by the poorest than the wealthiest classes. The late Hon. Geo. S. Hilliard has beautifully remarked : " I confess that increasing years bring with them an increasing respect for men who do not succeed in life, as those words are commonly used. Heaven is said to be a place for those who have not succeeded on earth ; and it is surely true that celestial graces do not best thrive and bloom in the hot blaze of worldly prosperity. Ill success sometimes arises from a superabundance of qualities in themselves good—from a conscience too sensitive, a taste too fastidious, a self-forgetfulness too romantic, a modesty too retiring. I will not go so far as to say, with a living poet, that the ' world knows nothing of its greatest men,' but there are forms of greatness, or at least excellence, which ' die and make no sign ; ' there are martyrs that miss the palm, but not the stake ; there are heroes without the laurel, and conquerors without the triumph."

The view I take of the *physical* effects of riches is sustained by the late Dr. Channing. He gives it as his opinion that the difference between the rich and the poor in regard to physical suffering is not as great as has been imagined, in support of which he says : " That some of the indigent among us die of scanty food is undoubtedly true ; but vastly more die from eating too much than from eating too little ; vastly more from excess than from starvation. So as to clothing, many shiver from want of defence against the cold ; but there is vastly more suffering among the rich from absurd and criminal modes of dress which fashion has sanctioned, than among the poor from deficiency of raiment. Our daughters are oftener brought to the grave by their rich attire, than our beggars by their nakedness. So the poor are often overworked ; but they suffer less than many among the rich who have no work to do nor interesting object to fill up life ; to satisfy the infinite cravings of man for action. According to our present modes of

education, how many of our daughters are victims of *ennui*, a misery unknown to the poor, and more intolerable than the weariness of excessive toil."

### Failures in Business.

Of those casualties which, through their depressing influence upon the mind, disturb the harmony of the nervous system, there are none, which prudence has power to avert, more prolific of nervous derangements than failures in business. In fact, financial prosperity often sustains men in apparent health, whose systems are loaded with diseases in embryo, and the first stroke of misfortune which causes the brain to withhold and consume within itself the measure of vital electricity which it habitually dispenses to the various organs of the body, removes the restraining power which holds the latent disorders of the system in check, and, all at once, the unfortunate business-man becomes the tenant of a sick-bed, or the inmate of a lunatic asylum.

The human brain sustains a similar relation to its dependency—the body—that the bank does to the commercial world. Its medium is not silver or gold certificates, but vital electricity; and its depositors and patrons are not merchants and manufacturers, but organs and functions. When trouble overtakes a man, a physiological "panic" ensues, and the brain discounts sparingly. If a "run" is made upon it, it partially or wholly "suspends." The process of digestion and the action of the heart, liver, lungs, kidneys, etc., are dependent upon the vital electric forces emanating from the brain, and when the latter is over-exercised with trouble and hard thinking, it reserves its electricity for its own use, leaving the body only partially supplied; and if the organs retaliate by denying nourishment to the brain, as they are obliged to do, in a measure, the delicately organized man becomes a lunatic, and the vigorous man, whose system is filled with inflammatory matter, a victim to some corporeal disease, acute or chronic.

"Hard times" invariably increase the labors of a physician, although they do not always increase the gold in his coffers. A bankrupt man is generally an invalid, a prostrate patient, or a mental imbecile. The statistics of lunacy show that in periods of industrial and financial depression there are large accessions to our asylums. The press is filled with accounts of suicides, and painfully anxious faces swarm in great business centres.

FIG. 82.



OTHELLO'S OCCUPATION GONE.

Such being the effects of business failures upon the health of a people, they should be avoided, as far as possible, by prudence and economy. "Live within your means," is an old and good proverb, and he who does not, almost invariably brings upon himself nervous derangements which are sure to lead to fatal results.

Every married man should confide to his wife the real condition of his finances. Much is said of the extravagance of married women. Their conduct is often pronounced the cause of their husbands' ruin. Much truth is uttered in such assertions, but not the whole truth. Men are apt to represent their pecuniary resources much greater than they actually are. As a sequence, wives laugh at their admonitions of economy—think their consorts "stingy"—and govern their wants by the supposed capacity of their purses. Nothing short of a failure reveals to them their insolvency.

The average wife's condition, under the most favorable circumstances, is a hard one, and she cannot be blamed for reaching for the good things of life, if her husband leads her to believe he is rich, particularly if he gives plausibility to her delusion by indulging in such superfluities as Havana cigars and expensive wines.

It is high time that men began to appear to their wives exactly what they are, pecuniarily, morally, and socially. Frankness in these respects would not only tend to lessen the number of business failures, but would greatly diminish the evils of prostitution. But deception, in most cases, commences in the moonlight nights before marriage and continues until some pecuniary or physical disaster reveals things as they are. This sometimes happens unexpectedly early.

There are unquestionably some wives who, with full knowledge of their husband's limited resources, endeavor to vie with their wealthiest neighbors, and bring upon their indulgent providers premature ruin and death. Such, however, are exceptions, and, when the grave closes over the victims of their foolish extravagance, they bitterly reflect on the errors of their conduct.

Running in debt to an extent beyond all present prospect of liquidation, is a common cause of failures in business. This error is almost characteristic of the Yankee, whose enterprising spirit leads him to embark in hazardous speculations. His organ of "Hope," generally predominates over his "Causality," and "Caution," and, urged on by largely developed propelling faculties, he frequently finds himself in deep water, without plank or life-preserver. He is, too, of all men, least calculated, physically, to endure reverses, for although he may succeed, by his indomitable will, in buffeting the waves of adversity, his physical health suffers from all such encounters. Here, too, the proverbialist whispers—"Live within your means."

**Dishonesty causes many failures.** Let one man of extensive reputation and high-standing in the commercial world turn trickster and defraud a bank or railroad of a large sum of money, and the whole community suffers. Public confidence is shaken. Men who have contracted debts with a good prospect of being able to pay, cannot extricate themselves from an unexpected dilemma. Failure after failure follows in the wake of the defaulter, destroying the prospects of many careful as well as careless men. Do defaulters ever reflect that their dishonesty carries thousands to premature graves? Observation proves such to be the fact. But reckless men seldom look at consequences, and if they can only raise themselves from the ashes of a financial ruin, which their dishonesty has brought upon a community, their humane curiosity is not sufficiently awakened to inquire how many have been buried in it.

Financiers, who are supposed to regulate the monetary affairs of the world, should realize the powerful influence they exert over the physical well-being of the race. Recklessness by the few should not be tolerated by the many, or at least, not countenanced. Every "false step" brings with it multitudinous failures, and failures in business produce depression of mind, and depression of mind disturbs the harmony of the nervous system, and this leads to mental and corporeal diseases of every variety, according to the predisposition of victims. Do not strive to acquire sudden fortune. Remember that contentment is wealth, and that there is no real wealth without it. He who passes through life with a sufficiency of food and clothing, and a contented mind, has the benefit of all the wealth the world possesses. In the language of Homer, "The best of things beyond their measure clog."

### Excessive Study.

"The mind, just like the stomach, takes  
Its food for pleasure, profit, use,  
Reflection all the virtue makes  
And serves it for its gastric-julce."

The mind may be overloaded as well as the stomach. Reading too constantly and studying too closely is as injurious to the mind and nervous system as is eating too much to the stomach and blood. The back doors of many of our colleges and seminaries open into lunatic asylums and cemeteries. The literary world is full of physical wrecks, and many a mind has become bankrupt by trying to acquire knowledge too fast, like the ambitious business-man who fails, through his over-exertions to get rich. Avarice for knowledge is generally more successful than avarice for money; but while the failure of the former leads to an empty head, that of the latter only leads to an empty pocket. Every man is born into the world with a certain amount

of mental capacity which will admit of cultivation, but not of forced growth. By gentle discipline the mental powers of a man will gradually develop, and reach maturity as early as good physical health will permit, but when the student attempts to crowd his mind with learning all at once, he not only fails to reach the high summit of his inordinate ambition, but often falls a helpless imbecile.

"Professor Houghton, of Trinity College, Dublin," says a newspaper writer, "has published some curious chemical computations respecting the relative amounts of physical exhaustion produced by

FIG. 83.



THE STUDENT AT HIS BOOKS.

mental and manual labor. According to these chemical estimates, two hours of severe mental study, abstract from the human system as much vital strength as is taken from it by an entire day of mere hand-work." This fact, which seems to rest upon strictly scientific laws, shows that the men who do brain-work should be careful, first, not to overtask themselves by too continuous exertion, and, secondly, that they should not omit to take physical exercise each day sufficient to restore the equilibrium between the nervous and muscular systems.

Studies, to be improving, must be pursued with a relish, the same as good edibles are

sought after by the epicure. If the mental appetite is too craving, gratify it sparingly, as every man should his corporeal appetite; if too dull, nurse it gently. An observance of this rule will prevent our institutions of learning from sending thousands of *mental dyspeptics* into the world to flash and flicker with intellectual light, and then go out like a used-up tallow candle.

### Excessive Labor.

"The night is come, but not too soon—  
The laborer's hand is weary growing."

Foolish pride and aspirations for wealth, more frequently than necessity, drive men to excessive labor. Both the mental and physical system demand rest, and inflict a penalty on the individual who refuses to grant it. Not only has nature ordained night as a season of repose, but usage among all civilized or semi-civilized peoples has set apart one day in each week as a period of rest for all human beings, and has so impressed the necessity of such a regulation on the human mind, that, however diverse may be the religious opinions of different worshippers, all have a day *professedly* set apart for that purpose. Thus, Sunday is



appointed by the Christians, Monday by the Grecians, Tuesday by the Persians, Wednesday by the Assyrians, Thursday by the Egyptians, Friday by the Turks, and Saturday by the Jews. The strict observance of the day is, however, unusual. The business man, although he be a constant attendant at church, is apt to look over his accounts and lay down his programme for the week, while the literary character meditates on what he will write or speak, regardless of the sentiment of the Roman philosopher, Seneca, who said that "the mind of man is like the fields, the fertility of which depends on their being allowed a certain period of rest at the proper season."

And a great deal of this over-work is for the frivolous purpose of driving a prettier span of horses than some neighbor, wearing a finer coat, holding larger estates, or possessing more of that attractive commodity—gold! The best remedy for this evil is *contentment*. This should be cultivated, for it is *wealth*. A contented man with fifty cents in his pocket, and a clear conscience, is far wealthier than the millionaire, whose daily thought and night-dreams are all about gold, and how more may be accumulated. Dismiss your avocations, all who can, at night and on the one rest-day of the week, and acquire contentment if you would preserve your nervous systems in health, and your minds in happy placidity. There are, it is true, many so pressed with want that they can hardly do so. Our sewing-women are the most unfortunate representatives of this class; but even they would be able to accomplish more in the end by religiously observing some hours for rest, divided between sleep and out-of-door exercise. Sickness, and consequent compulsion to entirely abstain from work for weeks and months, would not occur so often, if those who are obliged to support themselves by the needle would pursue this rule. A healthful position can hardly be maintained in plying the needle steadily, in consequence of which the activity of the vital organs is interrupted, and the circulation of the blood impaired. Exercise of some kind every day, and a reasonable amount of repose every night, are absolutely necessary to preserve health of body and mind. To assist in preserving the strength of the eye, it has been wisely suggested by the Surgeon of the Royal Ophthalmic Hospital of London, that "needle-women, embroiderers, etc., should work in rooms hung with green, and have green blinds and curtains to the windows. In China, this rule is adopted by the exquisite embroiderers of that country." Thus it seems we can learn something of the "heathen Chinese,"

FIG. 84.



THE OVERWORKED MAN IN HIS COUNTING-ROOM.

**Worry.**

"What's the use of worrying,  
Of hurrying  
And scurrying,  
Everybody flurrying  
And breaking up their rest?  
When everyone is teaching us,  
Preaching and beseeching us,  
To settle down and end the fuss,  
For quiet ways are best."

Some rhythmical writer, whose name I do not know, perpetrated the above jinglish verse. But while the advice is good, who can absolutely follow it? When a child is sick, nigh unto death, how can the

FIG. 85.



A WORRYING WOMAN.

devoted mother help worrying? When a country merchant has sold nearly all his goods on credit—merchandise for which he paid good money—and one by one the people he has trusted move out of town without paying their bills, what can he do but worry? How can he help it? When the doctor has some patients on his visiting list whose symptoms will not yield to his remedies, how can he lay his weary head upon the pillow at night without worrying? And so I might go on with a great variety of illustrations to show that it would be quite impossible to avoid some kinds of worry.

There is, however, a deal of worrying which might well be avoided, and it is of this kind I wish to speak. Good wise thinking uses up a great amount of vital force, but anxious, troubled thought, metaphorically speaking, makes a bonfire of the entire brain, leaving for the moment little but trembling fibres and hot ashes. Usually one little live spark is left to enkindle anew the same round of trouble, and the unfortunate sufferer nearly collapses with exhaustion. Only wonderful recuperative power could restore the normal condition, and this power may be spent by too frequent drafts upon its endurance. Jean Porter Rudd has well said: "One might as well take frequent spoonfuls of poison as to worry; while to think thoughts of resentment, malice, hatred, or revenge, is less wise than to thrust one's hand into a fire."

Theodore F. Seward tells us that "worrying is a species of insanity. We would," he says, "count a man insane who took a dose of poison every day to improve his health. He is no less mentally unbalanced who desires happiness, yet allows himself to indulge a habit of worry-



ing. It is like walking south to find the North Pole. It is going into a cellar to look for rainbows. It does not prevent or modify the dreaded ill, but paralyzes the powers by which the evil thing may be averted. Moreover, in nine cases out of ten the evil does not come. 'Children,' said a good man to the family gathered around his death-bed, 'during my long life I have had a great many troubles, most of which never happened.' A prominent business man told me the other day that his father worried for twenty-five years over an anticipated misfortune which never arrived."

The London *Standard* says: "If Mr. Seward can induce the American people to give up their worrying and fidgeting he will accomplish more for them than all that was done by his cousin, the distinguished Secretary of State, and all the Cabinet officers since the Revolution."

There are innumerable little annoyances which with practice can be put aside, and it is a wrong to one's self to let them find lodgement in the brain. The one to suffer is the person who harbors them, and it is not often that he can be made any better by dwelling upon them. Banish them, for they greatly lower the tone of the nervous system, and in many instances inflame the blood. An attack of rheumatism has often been induced by worry. Headaches are common results. Heart-aches always. Whatever disease the system may be subject to, is inevitably made worse by mental unrest. The most common causes of worry are simply borrowed or imaginary troubles. If one allows these to take lodgement in the mind, they will return as frequent unwelcome visitors, unless one resolutely shuts them out. They must be summarily ejected. Some people have a chronic habit of worrying. Their minds are mostly occupied with evils which are not present, but apprehended. By employing the mental powers in some useful manner, or by seeking the company of cheerful companions, this kind of worry can usually be avoided. There are those who are constantly dreading illness or death. Every little ache or pain is magnified. A slight throat cough is at once thought to be consumption—a tiny pimple is believed to be a cancer. Such worry is really liable to induce the very disease which is dreaded. Dr. Herbert Snow, of the Cancer Hospital, says worry is the chief exciting cause of cancer.

In a sermon on Worry, the Rev. M. J. Savage once said: "If you can help a thing, do not worry, but go to work to help it. If you cannot help it, do not worry, but wait, and preserve your strength for something you can do. There is no use in beating yourself against the bars of the universe. This is to be a child, and cry because it does not snow when your new sled comes home. To fret against the weather, for instance, is to think your convenience ought to interfere with and change an adamant chain of cause and effect that stretches from

eternity to eternity. To annihilate one drop of moisture or one ray of light in the heavens to-day would be as much a miracle as to pitch the Catskills into the Hudson by a wish. The wise man tries to get on the side of the movements and forces of the world, but never wastes his strength in beating against the barriers of the inevitable. \* \* \* Now in all these things, friends, what shall we do? Is it not really best to do all we can calmly, to plan as well and wisely as we can, and then hope for the best, and only take the worst when it really comes? I have about made up my mind, that since I have not got to die but once, instead of making it my life-work, I am going to 'live while I do live,' in the best sense, and then die all at once and have it done with! It is not worth while to die by piece-meal, spreading it over years and making all life dark with its shadows. Let us pick up and carry bravely the burdens that duty lays in our path, but let us not be cheated out of the best of our life by bugbear phantoms that tell us that something dreadful is always about to happen. Let it happen first, and then we will take care of it afterwards."

A newspaper reporter asked Senator Chauncey Depew how he kept young and ardent. "I don't worry," Mr. Depew replied. "My father and mother died of worry. Fifteen years ago I was gravely annoyed. I had endorsed more paper, lost more money. Things were dark indeed. My health was poor, my nerves were gone. I said to myself: 'Old man, that will never do. Stop worrying.' I ceased to worry. No matter what happened during the day I went to bed, leaving all my annoyances behind." Thus we see Mr. Depew is a philosopher as well as a good after-dinner speaker.

Anti-worrying societies and clubs are being formed in various parts of the United States, and they are beneficent institutions. It is a good thing for the chronic worriers to gather together, compare notes, and see how much misery they are unnecessarily bringing upon themselves. One can always laugh at another's phantoms, it is irresistible, and when the company of worriers get together and display their wares (in this connection it might be spelt *wears*), one would suppose that they would all become hilarious—pretty nearly laugh themselves to death. Then, inasmuch as worrying and hilarity are not compatible, the former would have to go. When worry proceeds from real causes, the skilful doctor can usually be of some service. Without administering mischievous opiates he can prescribe nerve-soothing remedies and supporting tonics. He can brace up and put your vital machinery in the way of re-establishing itself. In this way troubles that are nearly enough to kill can be bridged over, and the unhappy patient spared to enjoy many prosperous years. To once more quote the bard whom I introduced at the opening, I will close by saying, in the language of this poet:

" 'Tis better far to join the throng  
That do their duty right along ;  
Reluctant they to raise a fuss  
Or make themselves ridiculous.  
Calm and serene in heart and nerve,  
Their strength is always in reserve."

### Melancholy.

Some writer has facetiously remarked that "there are many people who keep pet griefs as certain other people keep lap-dogs, that they carry about with them wherever they go. These are the people who feel the best when they feel the worst, and are never so happy as when they are utterly miserable. Like the maiden 'who milked the cow with the crumpled horn,' they are always 'all forlorn,' and they keep a figurative dog to be 'tossed,' and a cat to be 'worried,' and a rat to be 'killed' upon every possible occasion. They turn down the leaf at, 'Oh, that my head were waters and mine eyes a fountain of tears,' as if griefs were like bulrushes, and flourished best in wet places."

FIG. 86.



THE MELANCHOLY MAN.

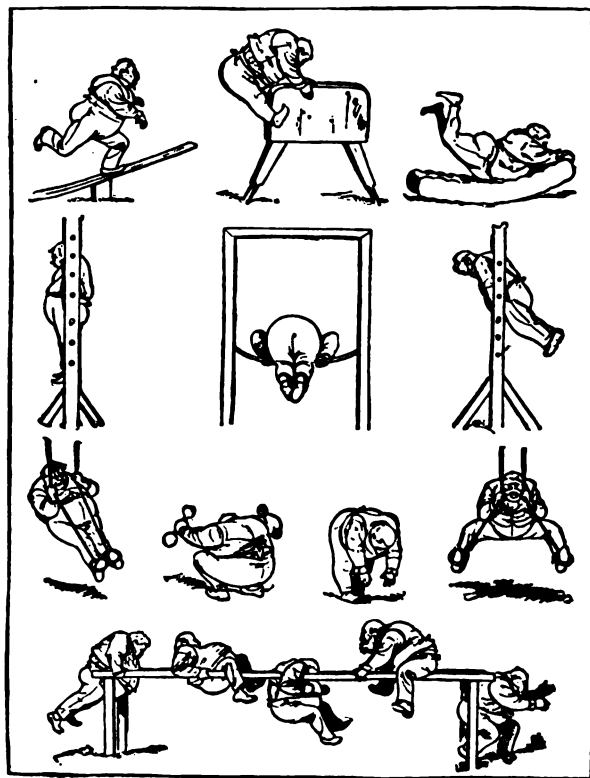
Melancholy seriously disturbs the circulation of the nervo-electric forces, and causes an undue consumption of the latter in the brain. Melancholy people are almost invariably dyspeptic, because a full supply of the electric element is withheld from the pneumo-gastric nerve, which conveys from the brain the force that gives tone and activity to the digestive organs. Despondency, in fact, affects all the organs of the system on the same principle; the brain consuming, in its excitement, more than its natural allowance of nervo-electricity, and, as a consequence, withholding the vital element from the organs which are dependent upon it for healthful action.

Cheerfulness should be cultivated by every one. It is an antidote for many ills; and a laugh is of immense value, physiologically. It produces an electric effect throughout the whole system. It is felt in no one place particularly, but every nerve, muscle, and fibre is simultaneously titillated with the electric flash from the brain. All who have melancholy friends should try to excite them to laughter. A few hearty laughs will cure the most desperate case of melancholy. It is a social duty to look cheerful, and a blessed privilege to laugh. "Away with melancholy."

Really the only melancholy which we may be excused for indulging in is that which must come over every one in observing the general ill-health with which we are surrounded, by the unfortunate customs

and habits which we recklessly observe and blindly pursue. They are so multitudinous, and so impertinently insinuating, that they may be compared to the insects of summer. They creep into a man's hat; they crawl into his boots; they nestle in woman's waistbands, and they conceal themselves in her trailing drapery. They fall into the food we eat, and drop into the liquids we drink. With the greediness of fabled vampires, they suck out the little brain some people bring into the world with them, leaving a sting that destroys all moral sense. They penetrate not only the tenement basement, but the drawing-rooms of the affluent. They mark the faces of the poor with pock-pits, and cause the rich to hobble about on gold-mounted crutches. Science must find a cure for their sting, and common-sense must devise means for their extermination.

FIG. 87.



### A CURE FOR MELANCHOLY.

## CHAPTER III.

### PREVENTION OF DISEASE.

If half the thought and sentiment that are spent on the subject of death, were bestowed on the practical duty of strengthening, lengthening, and ennobling life, we should be more fit to live worthily and die contentedly."—*Harriet Martineau*.



**C**URE," applies with greater force, in this connection, than it can in any other. If people would properly consult temperaments in marriage ; then, if they would take some thought and pains to prepare themselves to become the healthy parents of viable children ; and then again, if the children of such careful progenitors would take reasonable care of the valuable legacy bequeathed to them, after a few generations the good people could tip their hats with a sarcastic good-by to the doctors, use patent nostrums for poisoning troublesome insects, and limit the business of the undertaker to the burial of those who die by accident or old age. A writer in the *Atlantic Magazine* says : " In our civilized sedentary life, he who would have good health must fight for it. Many people have the insolence to become parents, who have no right to aspire to that dignity ; children are born who have no right to exist ; and skill preserves many whom Nature is eager to destroy. Civilized man, too, has learned the trick of heading off some of the diseases that used to sweep over whole regions of the earth, and lay low the weakest tenth of a population. Secondly, while the average duration of human life has been increased, the average tone of human health has been lowered. Fewer die, but fewer are quite well. Many of us breathe vitiated air, and keep nine-tenths of the body quiescent for twenty-two or twenty-three hours out of every twenty-four. Immense

and the most depressing opinions, and convert the day set apart for the purpose of recreation into one which aggravates some of the ailments of the weak, and counteracts none of them. Half the population of the United States violate the law of Nature every time they take a walk, and the children go, crammed with indigestion, to crowded, unventilated, or unventilated school-rooms. Except in a few instances, the bread and meat are almost universally inferior, and the little study books that are good are those which ought not to be read at all. At most family tables, after a course of meat, which has the double propensity of being both soft and tough, a profusion of indigestible puddings, cakes, and other abominable trash, disagrees with the stomach of the mature, and injures all. From bodies thus impeded, it is not to be wondered at, that excessive exertions of all kinds."

The proprietor of an expensive steam-engine would never permit a foreign stranger to take care of it, as he allows to take care of his own little steam-boat machinery. He will not employ an engineer who does not fully understand the entire mechanism of the engine. He will employ a man who knows when to increase and when to decrease the amount of fuel, when to let off some of the superfluous steam, and when to clean out the ashes and cinders; and when to add a lubricator to all the various parts subject to friction. Well, now, the human system is a thousand times more intricate and delicate in its mechanism than the steam engine, and yet people all over the world employ a man who knows nothing of its complicated parts—are ignorant of the functions of many of them; and are entirely incapable of selecting the proper food (fuel) to keep it in first-rate order.

As the case of an observant, reflective physiologist, it sounds almost like an insult to the Creator to say that providence has taken this or that young relative or friend from the family of which it is a dearly loved member. An anonymous writer disposes of this fallacy with the following pointed interrogatories and sensible replies: "Take, for example, the young girl bred delicately in a town; shut up in a nursery in her childhood in a boarding-school through her youth, never accustomed to air or exercise—two things that the law of God makes essential to health. She marries; her strength is inadequate to meet the demand upon it. Her beauty fades early. 'What a strange Providence that a mother should be taken in the midst of life from her children!' Was it providence? No! Providence has assigned her three-score and ten years, a term long enough to rear her children, and to see her children's children; but she did not obey the laws on which life depends, and, of course, she lost it.

"A father too, is cut off in the midst of his days. He is a useful and distinguished citizen, and eminent in his profession. A general buzz rises on every side, of 'What a striking Providence!' This man

has been in the habit of studying half the night, of passing his days in his office and the courts, of eating luxurious dinners, and of drinking various wines. He has every day violated the laws on which health depends. Did Providence cut him off? The evil rarely ends here. The diseases of the father are often transmitted; and a feeble mother rarely leaves behind her vigorous children.

"It has been customary in some of our cities for young ladies to walk in thin shoes and delicate stockings in mid-winter. A healthy, blooming girl thus dresses in violation of Heaven's laws, pays the penalty—a checked circulation, cold, fever, and death. 'What a sad Providence!' exclaim her friends. Was it Providence, or her own useless and sad folly?

"A beautiful young bride goes, night after night, to parties made in honor of her marriage. She has a slight sore throat, perhaps, and the weather is inclement; by day her shoulders are loaded with furs, but on these occasions she must wear her neck and arms bare, for who ever heard of a bride in a close evening dress? She is consequently seized with an inflammation of the lungs, and the grave receives her before her bridal days are over. 'What a Providence!' exclaims the world. Alas! Did she not cut the thread of life her own self?

"A girl in the country, exposed to our changeable climate, gets a new bonnet instead of getting a flannel garment. A rheumatism is the consequence. Should the girl sit down tranquilly, with the idea that Providence has sent the rheumatism upon her, or should she charge it to her own vanity, and avoid the folly in future? Look, my young friends, at the mass of diseases that are incurred by intemperance in eating and drinking, in study or in business; by neglect of exercise, cleanliness, and pure air; by indiscreet dressing, tight lacing, etc., and all is quietly imputed to Providence! Is there not impiety as well as ignorance in this? Were the physical laws strictly observed from generation to generation there would be an end to the frightful diseases that cut life short, and a long list of maladies that make life a torment or trial. It is the opinion of those who best understand the physical system, that this wonderful machine, the body, this 'goodly temple,' would gradually decay, and men would die as if falling asleep."

No one but a fanatical pietist can find fault with the foregoing, and how can he consistently? Is he not taught to regard the Heavenly Father as the author of all *good*? "How about the loss of our dear baby?" some afflicted mother may inquire: "It surely had committed no physical sin; and I was careful in feeding and clothing it; and scarcely allowed it out of my sight." Ah, woman, you must look farther back for the causes of your infant's early death. They may have been as remote as the violations of the laws of health by its grandparents, or great grandparents. They may have originated in your ignorance, or



whether the earthly existence of the future man or woman shall be happy or miserable. Still the terms of to-day with twenty or fifty years hence that it had never been born. The friends of the pregnant woman and all those who surround her should be united to prevent this. She may maintain her physical health by seeking for residence such locations as are proverbially healthful. Living and sleeping in well-



A CLUSTER OF BIRDS.

No. 1 represents pure wisdom. No. 2—the offspring of parents who ought not to have had children. No. 3 represents suffering labor—the offspring of parents in an unhealthy condition. No. 4 is found here—the child of an ill-balanced parentage. No. 5 is now Henry—the child of wisdom, labor, and love. No. 6 is healthy Charles—the normal offspring of healthy and intelligent parents.

Many offers: by prayerfulness; if a religious; by sweet communion with Nature. If a moralist: by avoiding jealousy, selfishness, pettiness and overbursts of temper; by indulging in the passion of hatred toward no one; and by cultivating a love of humanity. The more closely a pregnant woman can observe the foregoing rules, the more nearly will she succeed in giving birth to a being that shall possess at once a healthy, vigorous brain, a happy temper, and a spirit of philanthropy.

ventilated rooms: carefully watching diet—eating only those things which seem to agree with stomach and mind: avoiding excessive and irregular eating: exercising daily in the open air without reference to the criticism of Mrs. Grundy on her person or the sneaking looks of the others: observing habits of personal cleanliness, and in brief, by patient, constant watchfulness, doing every thing within her power to promote a feeling of health, and avoiding every thing which in any way produces the contrary effect. Mental tranquillity may be maintained by carefully keeping up the physical health: by association with those who are cheerful and entertaining; by reading books and newspapers of an interesting and elevating character; by doing acts of kindness and benevolence when opportunity offers: by prayer-

## SOME GENERAL HINTS.

There are some hints to be observed which could not be properly classed under any of the foregoing heads. Conception should not be allowed to take place without a preparatory season of abstinence from sexual indulgence, in order that the procreative systems of both parties may be free from morbid excitability and exhaustion. It should not occur when the muscular system is exhausted by overwork or exercise. It should not happen immediately, or for some time, after eating, when the nervous forces are being largely employed by the digestive organs in doing their work, and consequently refuse to be sufficiently engrossed to perform the function of reproduction as well as the procreative organs are capable of performing the latter function when the stomach is at rest, and can "lend a hand." It should not happen while the mother is already nursing, thereby causing a division of nourishment between two, which is sufficient for one only; for it must be borne in mind that the pregnant mother has to feed the growing unborn babe, as well as the one in the arms. It should be known to the reader that some women conceive during the period of lactation, and that this evil should be guarded against. Nor should it be allowed to occur in less than two or three years after the birth of a child; and in some cases five years should intervene between the ages of the children, for the mother to sufficiently regain a physical condition capable of imparting health to one in utero-life.

During the period of pregnancy, excessive sexual indulgence unduly develops, in the unborn child, the passion which leads so many young people to a destructive vice. Even amative excitement, on the part of the mother, without indulgence, has a tendency to do this. She should consequently avoid such food and drink as stimulate the amative impulse. When the impulse becomes strong—when the desire is so great as to take possession of the mind, it is then better that it should be gratified, lest the fœtus be marked by this unsatisfied appetite, thereby producing the very evil sought to be avoided. Sleeping in separate beds may be advisable in some cases, to prevent the tendency to excitement by contact. Association with deformed people, or those having birth-marks, or diseases which cause unnatural manifestations and expressions, should be avoided so far as practicable, to avert the danger of marking the unborn child with any of these peculiarities. Cramped positions in sitting, stooping, bending, and sleeping; falls and contusions; and violent coition in sexual intercourse, should be cautiously avoided, to save the precious little being in the womb from displacement of its limbs, or spinal distortion, which might result in permanent physical deformity; for although remarkably well protected by surrounding membranes, fluids, and the muscular walls of

the uterus, the fœtus is sometimes deformed by one or more of these causes.

Lastly, when labor-pains commence, and the doctor is called in, to not urge or allow him to hasten a work which old Dame Nature is usually able to do herself, without intervention or aid. If you do, you may injure the child. Especially is this danger imminent if instruments are employed. Women in labor are naturally impatient, and surrounding friends must not be too much in sympathy with this impatience. Physicians are often impelled by the solicitations of those present to make the period of labor as brief as possible; and it would be well for all to know that this effort to help matters along not unfrequently results in retarding it, and increasing the sufferings of the patient. It is better to give her moral encouragement; cheer her up; keep up a running conversation, that will divert her from the discomfort of the moment; but keep hands off—at least do not employ them locally to hasten the birth. It is well for her to move about, for by exercise and bodily motion labor may be safely accelerated. In some parts of Mexico the native women fasten ropes in the beams above their heads, and, taking one in each hand, suspend themselves perpendicularly, and remain in this position until the affair is over. This position is a good one to facilitate the process, and some such arrangement might well be adopted by women generally, for labor is often rendered unnecessarily tardy and painful, by a bad position of the patient, as well as by the drugs and instruments employed to assist.

With this brief caution to women at the critical period of parturition I will close this essay, and proceed to answer the next question in order.

#### **How to Preserve the Health of Children.**

After the baby arrives, the next duty is to take care of it properly. The nurse, grandma, aunt, or some other kind attendant knows how to wash it, and sometimes, not often, how to dress it, and many other et ceteras are to be thought of. Mrs. Elizabeth Cady Stanton, a great and sensible woman, as well as an experienced mother, in her book entitled "Eighty Years and More," says: "An important fact has only been discovered and acted upon within the last ten years, that children come into the world tired, and not hungry, exhausted with the perilous journey. Instead of being thoroughly bathed and dressed and kept on the rack while the nurse makes a prolonged toilet and feeds it some nostrum supposed to have much needed medicinal influence, the child's face, eyes, and mouth should be hastily washed with warm water, and the rest of its body thoroughly oiled, and then it should be slipped into a soft pillow case, wrapped in a blanket and laid to sleep. Ordinarily, in the proper conditions, with its face uncovered in a cool,

pure atmosphere, it will sleep twelve hours. Then it should be bathed, fed, and clothed in a high-necked, long-sleeved silk shirt and a blanket, all of which could be done in five minutes. As babies lie still most of the time the first six weeks, they need no dressing." Mrs. Stanton also advises the nurse "to wash the baby's mouth with pure cold water morning and night, and give it a teaspoonful to drink occasionally during the day, thereby avoiding the danger of red gum." In one instance she telegraphed a young couple: "Give the baby water six times a day." With Mrs. Stanton's hereditary wisdom and her experience as a mother, her advice for the management of babies is more reliable than that of any masculine physician, however noted and skilful.

Babies are generally dressed too tightly. Their bones are as elastic as cartilage, and their flesh is spongy, in consequence of which the little lumps of humanity give way easily to pressure. The baby clothes which have been so studiously prepared in anticipation of the event are unconsciously if not intentionally pinned or sewed on too closely to allow circulation and physical development to naturally go on. Mrs. Stanton disapproves of bandaging, which is quite in keeping with the advice I give to avoid tight-fitting garments. She demonstrates in the chapter from which the foregoing quotation is made, that bandaging is entirely unnecessary. The next error deserving criticism is usually an excess of clothing, both by day and by night. Mothers think their babies are such tender little things that they must be warmly clad, hence the flannels, etc., are put on like so many layers of onions. As a consequence, the little sufferers wriggle and twist and cry all day to get out of them; and kick them off altogether by night, which last act of the triumphant heroes gives them a cold.

Let me now appeal to the observation of mothers. You know, don't you, that your babies at night *will* kick the clothes off? You tuck them in here, and pin them down there, but when you rub your eyes open at midnight, or near morning, you are surprised to find them nearly or wholly outside of their bed-covering. What can it mean? Now will you tell me what causes you to kick off your bedclothes sometimes? Do you do it because you are cold? Is it always because you are nervous or fidgety?

How often, an hour or two after you have put your child to bed, you will find by laying your hand on its brow, that it is bathed with perspiration. Is it necessary that you should give it a sweat? If not, why do you not remove a portion of its covering? The skin should not be wet; it should be scarcely perceptibly moist. If you have night-sweats, you become frightened, and run to the doctor; but you persist in giving your babies night-sweats! By careful observation you may ascertain just how much clothing your child needs, and just how to vary it to suit all atmospheric changes. Nearly always when it

wriggles out of, or kicks off clothing, you may rest assured that it is too warmly blanketed. Remove a little of the covering and watch again. If it repeats the same thing, take off still more, and so continue to do until the restlessness of the little creature subsides. You will be surprised, at last, to see how very little covering an infant needs. In rigorous winter, the indigent mother sometimes freezes to death ; not so the babe beside her. Who cannot call to mind some illustration of this remark ? I think I have fully demonstrated the assertion that babies and children require less clothing than adults ; but if any fail to

FIG. 80.



THE TRIUMPHANT BABY AND SURPRISED MOTHER.

be convinced, let me ask them which they suppose will best conduce to the health of the child — to make it tender by much clothing, so that by getting the clothes off at night, or some other exposure, it inevitably takes cold ; or by clothing it sparingly so as to accustom it to cold weather and its changes ?

#### THEIR LITTLE LEGS NEED CLOTHING.

Another important suggestion in regard to clothing is, that it be so distributed to the various parts of the body, that the circulation may not be impaired. In my essay on the clothes we wear, and in some observations in other places on tight-lacing, I have sufficiently cautioned the reader against tight fitting clothing, and I will not in this place do more than call attention to those remarks ; but let me here speak of the great error of dressing the neck, chest, and abdomen warmly, and leaving the limbs scantily covered. I have seen children dressed like High

landers—with nothing on the limbs at all, while the upper portions of their bodies were clad in flannels. "The dear little things look pretty, don't they?" Well, I must confess that they do to those who do not know the physical consequences of such an unequal distribution of raiment. Their plump legs, white or rosy skin, and dimples in the knees are charming; but the exposition of them should only take place when their whole bodies are equally exposed. Everybody knows, or ought to know, that the circulation of the blood in any part is more or less governed by the temperature of that part. Warm dressing of the feet and limbs, for instance, invites the blood into them; and if they are more warmly dressed than the rest of the body, there will be an undue presence of blood in the extremities. If this habit of dress be reversed, and the upper portions of the body be more warmly clad, then the lungs, liver, stomach, heart, and head become congested by the excessive presence of blood, while the extremities are cold, and the circulation in them insufficient. Want of common-sense on this point is a great cause of nervous and blood derangements; and in many cases the immediate cause of headache, congestion of the lungs, dyspepsia, and constipation among adults, particularly women. I once heard the late Dr. Dio Lewis very felicitously describe the dress of women before a gymnastic class. I will not attempt to give any portion of his remarks, but some things I have to say here were substantially presented by him. Let us for a moment look at the dress of women, especially that worn in winter. An ever-varying head-dress, exposing, during the continuance of one fashion, that part of the head which had been covered by the style of hat and head-dress in vogue immediately previous. Fur collars about the neck, and in many instances fur cloaks enveloping the whole upper portion of the body. Flannels extending from the neck to the waist, with sometimes many other garments over them, thus producing undue warmth in that part of the body containing the vital machinery, while the limbs are protected only by cotton, or cotton-flannel, at best one thickness of flannel in the shape of drawers, coming a little below the knee, where they meet and lap under white cotton stockings.

Now, with such a costume as this, where does the blood go? A skirt and a petticoat or two, will not compensate for the furs and other garments about the neck and waist, and the blood will congest those parts which by warm covering are kept at the highest temperature. Hence the complaints: "Oh, what an awful headache I do have!" "Doctor, what do you suppose is the matter with my stomach?" "I am habitually constipated," etc. It would be well for all women to remember, both in clothing themselves and their children—if they are mothers—the whole body should be equally clad to insure a good circulation. The mere fact that you have lung difficulties will not



excuse you for covering your chest with woollen and fur unless you put precisely the same covering on your limbs. For every garment put over the chest, one of equal warmth should be placed over the limbs, or you will defeat the very object you desire to attain ; and mothers, if you will be reckless of your own comfort, health, and life, by obeying the caprice of fashion rather than the laws of hygiene, I pray you heed the hints herein given for taking care of your children ; for, possibly, by the time they become men and women, health will become more attractive than dress.

#### HOW BABIES SHOULD BE FED.

Leaving the criticism of dress, we will next turn our attention to the food of children. It would seem hardly necessary to start out with the remark that babies should not be fed on cow's milk when that from the breast of a healthy mother or nurse can be obtained ; but observation proves that mothers are careless—wilfully ignorant—or wantonly indifferent in regard to this matter. I would call the attention of all who are interested in it, to the comparison between the milk of the cow and that of the human mother, in the essay on milk, in Chapter II. The breasts of women are nowadays too much cultivated with reference to a pretty form and figure ; and while this need not be discouraged, the necessity of developing the mammary glands, with a view to making them productive of nutritious milk when their possessors become mothers, is of far greater importance. It is especially so when young mothers decline to nurse their babies, lest the breasts should become flabby, or otherwise affected in their symmetry. Speaking of women, the Rev. O. B. Frothingham very truly remarked : “It may be a great thing to be a merchant, a financier, an advocate, judge, writer, or orator, but before these can exist, there must be men ; before these can be what they should be, there must be healthy, disciplined men ; there must be well-bred youths, carefully instructed, and carefully trained children ; *infants lying on deep motherly bosoms, and sucking rich motherly milk.* Yes, more than that, inhaling the pure womanly spirit. It may be a fine thing to have control of their property ; to help in making the laws they live under ; but to be good mothers of men and women, is the greatest thing in all this world.” Many mothers in fashionable life, who are endowed by nature with well-developed organs for nourishing their babies, shirk the responsibility because it is a task—it soils their fine clothes—or what is still more nonsensical—because suckling their young is doing so much like the inferior animals. To such folly has an undue love of ease, and a false idea of refinement led many women ! When, however, such considerations govern mothers, or when an imperfectly developed body has failed to endow the mother with the power to nurse her child, it should not be fed on the milk of



cows or goats if a wet-nurse can be obtained, for it is quite unlike human milk in its qualities, as already remarked ; and then, too, some discrimination should be used in the selection of a nurse. A cross, ill-natured woman ought not to be employed, because bad temper affects the secretions of the mammary glands, as well as it does other secretions. A scrofulous nurse will not answer, because she not only gives the child scrofulous food from her breasts, but daily bodily contact with her affects a healthy baby injuriously. Recollect what Dr. Combe said about the atmosphere of a scrofulous person being contagious. A puny, sickly nurse, is also incapable of imparting to a child the nourishment it requires. A nurse must, indeed, be a healthy, temperate, good-natured, kindly woman, with the milk of human kindness flowing from her soul, and pure, wholesome milk issuing from well-freighted bosoms. When such a nurse cannot be obtained, there is manifestly no nourishment so wholesome for babies as the milk of healthy animals diluted sufficiently to agree with the infant stomach, for all vegetable preparations for babies have a tendency to cause acidity, and contain particles which the young digestive machinery is not strong enough to dissolve. Meats, and the juices of meats, will not answer, as they are too stimulating. They are not, indeed, fit for a child under ten years of age, as the reader will observe in my next essay on dietetics.

#### BATHING, EXERCISING, DOSING, ETC.

In addition to clothing and feeding babies properly, attention must be given to bathing and exercising them. If they are fat and full of animal spirits, they should be sponged every morning with tepid water and a little (very little) castile soap. If lean in flesh, they should be so treated only every alternate morning ; but their little bodies should be rubbed down gently with a healthy hand, from head to foot, every day. If the child be absolutely wasted so that marasmus is threatened, it would be better to use a good quality of sweet oil instead of water, and rub it from head to foot with the magnetic hand ; after which wipe it down with a dry napkin. This will keep the skin healthfully active and cleanly ; and the absorbing pores may be provoked to take up some of the oleaginous matter, and with it assist in inaugurating plumpness. Babies should be carried into the open air daily in all weather, and shaken and jostled by their nurses. Babies, as much as adults, need muscular exercise to develop the muscular system. They are not strong enough to take that exercise themselves, and it is, therefore, necessary to tumble them about, squeeze their muscles, pat them, and attend to all those little matters which go to promote muscular development. A writer in *Blackwood's Magazine* very sensibly advises nursery tales, rhymes, and other good things. "I would," he remarks,

"say to every parent, especially to every mother, sing to your children, tell them pleasant stories; if in the country, be not careful lest they get a little dirt upon their hands and clothes; earth is very much akin to us all, and children's out-of-door plays soil them not inwardly. There is in it a kind of consanguinity between all creatures; by it we touch upon the common sympathy of our first substance, and beget a kindness for our poor relations, the brutes. Let children have free, open-air sport, and fear not though they make acquaintance with the pigs, the donkeys, and the chickens; they may form worse friendships with wiser-looking ones. Encourage a familiarity with all that love them. There is a language among them which the world's language obliterates in the elders. It is of more importance that you should make your children loving, than that you should make them wise. Above all things make them loving; and then, parents, if you become old and poor, these will be better than friends that will neglect you. Children brought up lovingly at your knees will never shut their doors upon you, and point where they would have you go."

Babies must also be carefully guarded from all poison, external and internal. Vaccination often destroys the health, if not the life of a child. Read what I have said under this head in the chapter on the Causes of Nervous and Blood Derangements. Mothers should be careful that their nipples are free from eruptions which might possibly inoculate the baby with their impure secretions. Nurses and other attendants should have clean hands and well-washed calico gowns. Look out for the napkins and towels which are employed about the baby. Carefully exclude from the nursery all poisonous or unwholesome things which the baby can, on floor or in chair, lay hold of. Every thing, you know, goes into the mouth of an infant. Painted toys have sometimes caused the most serious consequences in the hands of babies.

Excessive and injudicious dosing is a common cause of ill-health among children. If a child take a slight cold—if it have a little pain in the stomach—if the bowels move a little too frequently—if it have earache—if it be restless and fretful—the doctor is sent for, who, either through ignorance of the injurious effects of unnecessary drug-ging, or from fear of not pacifying the mother, deals out a little of this, that, and the other thing, to be taken at various hours of the day or night. In the majority of cases children do not need medicating, and a mother more often injures her child by sending for the doctor too soon than by delaying too long. *External* applications of proper remedies will, in a majority of cases, cure all sorts of baby complaints. I do not exactly want to assume the character of a panacea pedler, but I feel moved to say, in this connection, that if you possess a bottle of my magnetic ointment, such as I speak of in the closing part of my book, a doctor need seldom be called. If a child have a cold, attended

with any affection of the throat or lungs, apply the ointment thoroughly to the throat and chest; if wind colic, cramping of the stomach or bowels, loss of appetite, worms, diarrhœa, or the opposite—constipation—apply the ointment to the stomach and bowels for several minutes with the hand. If the child receive a bruise, cut, or burn, the ointment will prove a never-failing remedy. For weakness of the spine, weakness or pain in the limbs, stiff neck, for cold feet, etc., it may be successfully applied to the part affected. It may be effectually applied to the region of the bladder in incontinence of the urine, or other affections of the bladder. In brief, there is hardly an infant ill which the external use of this ointment will not relieve, and generally completely cure; while grown-up children, who have once introduced it as a family medicine, feel that they cannot pass a night without it in the house. The reader should have the formula except for the fact that you would not prepare it if you had it. It requires the skill of a pharmacist and much experience to prepare it properly. Nor could it be prepared economically in small quantities, suited for family use.

FIG. 20.



THE EDITOR'S PLAN FOR DIVERTING THE BABY.

Simple hand friction will often relieve the local difficulties of children. Do anything—do everything, mother, but administer to the sensitive little stomach a dose of medicine. Soothing syrups are invariably anodynes in their properties, and almost invariably contain morphine or opium. Rather than use them for a nervous or fretful child, I would resort to the ridiculous remedy proposed by a Buffalo Editor. "As soon," he says, "as the squaller awakens, set the child up, propped by pillows if it cannot sit alone; smear its fingers with thick molasses; then put half a dozen feathers into its hands, and the young one will sit and pick the feathers from one hand to another, until it drops asleep. As soon as it awakes—more molasses and more feathers, and, in the place of nerve-astounding yells, there will be silence and enjoyment unspeakable." It is well to bear in mind that a child may at times be restless and irritable from thirst, and that a half cup of cool water will comfort it. If it have colic, try plain hot water, but try it yourself first.

## THE EDUCATION OF AN INFANT.

In regard to the education of an infant, a review of a work by Dr. Nathan Oppenheim, entitled "The Development of the Child," gives the results of his observations and researches. He having been the attending physician to the children's department of Mount Sinai Hospital Dispensary, ought to be qualified to advise in such matters. The reviewer says: "Children are regularly sent to school so that their time for a large part of the day may be well taken up, and that the parents may thus have a season of freedom. In addition the little ones are taught *too* much. Dr. Oppenheim observes that the facts which are learned by a tremendous outlay of nerve-force are of little, if any, use. He shows that the nerve-cells concerned in the process of learning are immature, and therefore not in a condition to do fine work. Instead of being benefited, the children are apt to be definitely harmed by a system of teaching which is supported at a tremendous expenditure of time, trouble, and money. He wants to apply to ordinary education *some* of the methods of Froebel and Pestalozzi, after simplifying and purifying them by a scientific training which those great teachers never had." A well-conducted kindergarten is undoubtedly the proper place for a young child.

## "DON'TS" FOR THE NURSERY.

Among my scraps I find a list of "don'ts" which may well appear in this essay. I do not know who was the author, but as this method of giving instruction by "don'ts" originated with my son, Dr. Foote, Jr., it does not matter much. Literary indebtedness is about even. These "don'ts" are sensible, of practical value, and the reader shall have them: "Don't hang curtains around the cot. Children need plenty of air, especially when sleeping. Don't place the cot in a position where the light will fall on the child's eyes; nor in a draught. Don't make up the baby's bed on the floor. The air is most pernicious near the floor, and purest in the middle of the room. Don't forget that children's clothing should be reasonably warm, but light. Don't forget to remove the child to a cot with a hair mattress, when old enough to leave the cradle. Don't neglect to air the child's bed-clothes every day, taking them in about noon. Don't allow a child to sleep with an elder person; its rest will be less disturbed and more beneficial alone." "Don't cover the baby's face completely with a blanket shawl." So says Mrs. Stanton. She also says "Ignorant nurses and mothers have discovered that children sleep longer with their heads covered. They don't know why, nor the injurious effect of breathing over and over the same air that has been thrown off the lungs, polluted with carbonic acid gas. This stupefies the child and prolongs the unhealthy slumber." I

will add to the foregoing list the following : Don't strike a child on the head. The brain is a great nervous reservoir where all the nerves centre, and a blow here may kill it outright, or make it idiotic. Don't "box ~~its~~ ears." There is danger, by doing so, of rupturing the eardrum, thereby rendering the hearing defective if no greater evil ensue. Don't whip it with a stick or lash—such a punishment deranges the action of the capillaries and the circulation of blood through them. Don't fill its imagination with hobgoblins, and shut it in a dark room. Kept for moments or hours under the influence of fright, the nervous system is fearfully affected, and made susceptible to attacks of a spasmodic nature. Don't punish it by depriving it of its regular food, for then stomach derangements are inaugurated. All kinds of punishment should be avoided if the child can be controlled by moral influences ; but where punishment is necessary, a "good spanking" is the only physical chastisement the body presents a proper place to receive ; while those acting upon the fears of the child should be avoided altogether.

#### **Dietetics for Old and Young.**

Little space will be occupied under this head, because the reader may learn from the essay entitled "The Food we Eat," in the second chapter, the author's views on what may be regarded as wholesome food ; but I have something important to offer in this place which, if observed, will have a tendency to build up the physical man, and guard against the insidious approach of disease. Nowadays, children and youth accustom their systems to a stimulating diet, suited only to the sluggish systems of older people, so that when old age comes upon them, they have nothing to turn to but medicinal tonics to impart to the infirm body and mind strength and vivacity. So long as animal food continues to find a place upon our tables, and stimulating liquids are tolerated by nearly all, and used by a large portion of mankind, the rule should be as follows :

"Milk for babes," and that only, if possible, which issues from the breasts of healthy mothers. "Mush and milk," for children under six years of age ; and during this period all wholesome vegetables may be permitted, but no stronger animal food than milk. Passing the sixth year—butter, eggs, and fish may be allowed to enter sparingly into the diet of the child ; and from the twelfth year—poultry, broths, and the soups of other meats. Not before he is fifteen or twenty should he be permitted to taste of steak, roast beef, or other strong meat. Not before he is twenty-five or thirty, should he allow himself to drink coffee or tea. Not earlier than forty or fifty should beer or other liquors pass his lips. Then, when the infirmities of age begin to creep upon him (and they will come later under this regimen), if it be neces-

nary to resort to stronger stimulants, such inventions as Bourbon whiskey, French brandy, Holland gin, Jamaica rum, etc., may be called to the rescue. But, understand me—I do not advise malt liquor or strong drinks; I merely say, so long as animal food and stimulating liquors are used, the foregoing rule is the proper one to be pursued, and now for the reason:

Children cannot well endure a stimulating diet. Their little vital machinery, fresh from the ingenious hands of nature, is full of life, electricity, and animation. At birth their palpitating little hearts contract from 180 to 140 times per minute. At the age of three, a child's pulse is about ninety, while that of an adult averages seventy-two. Stimulating food, of course, quickens the activity of the vital organs of children, and this morbid activity renders them susceptible to inflammatory diseases. Hence the prevalence of measles, scarlet fever, canker-rash,

FIG. 91.



A HEALTHY MOTHER AND CHILD.

chicken-pox, and other ills, hardly known to adults. I really believe that these disorders would never affect children if they were fed and clothed properly, or in such a way as not to derange the activity of their vital machinery as set agoing by good old Dame Nature. The blood of children is richer in solid constituents, and especially in blood corpuscles, than that of adults, and as animal food tends to increase this richness and solidity to a greater extent than vegetable food, allowing to a child the former, inevitably causes an undue

proportion of those constituents to go to the blood, thereby rendering the vascular fluids as ignitable to the breath of contagion as powder is to the touch of fire. Intelligent mothers, who set their children's blood on fire with the flesh of animals as food, and then let their doctors kill them in endeavors to quench it with poisonous drugs, should hesitate before they add fuel to the flame. Children do not crave meats, they would not eat them if they were not introduced into their toothless mouths while they are in swaddling clothes, while they have not sense enough to reject them, by which means they acquire a taste for this kind of diet. If meats are denied the children, strong drinks will not be craved by the middle-aged; for in a perfectly healthy condition of the human race, meats and strong drinks would not be needed, and the promptings of appetite might be trusted; but now pandemonium exists in the palates and stomachs of men because they are not started right in babyhood and childhood; and the hydra-headed gourmand



looks forth from behind decayed and broken-down teeth, for things totally unsuited to the development of the inner man.

Fruits are excellent preventives of disease in children and men. The value of apples as food is suggested by Liebig, who says: "The importance of apples as food has not hitherto been sufficiently estimated or understood. Besides contributing a large portion of sugar, mucilage, and other nutritive compounds in the form of food, they contain such a fine combination of vegetable acids, extractive substances, and aromatic principles, with the nutritive matter, as to act powerfully in the capacity of refrigerants, tonics, and antiseptics; and when freely used at the season of ripeness by rural laborers and others, they prevent debility, strengthen digestion, correct the putrefactive tendencies of nitrogenous food, avert scurvy, and maintain and strengthen the power of productive labor."

Nature has kindly looked to sanitary effects in providing summer fruits. As mankind emerges from the winter season, more or less loaded with carbonaceous dregs which have accumulated under the influence of a keen appetite, and the use of hearty food to warm the body in spite of the cold atmosphere, strawberries, currants, and other acid fruits of a relaxing nature to the bowels are presented for his use; and these dissolve and wash away the effete accumulations of the liver, stomach, and bowels. Lest, however, this process be carried too far, raspberries, with a mild astringency, quickly follow, checking any undue activity of the bowels; and, finally, when hot weather comes upon us, rendering the system an easy prey to diarrhœa, along come the luscious, dimple-faced blackberries, with still greater astringent qualities, which have the power even to cure an attack of summer complaint. The provident housewife not only welcomes their advent, and provides them abundantly for the table, but from their rich juices she prepares blackberry syrup for use in all seasons when the little ones are attacked with bowel complaint. Good, loving, kind-hearted, old Dame Nature; and wise, maternally affectionate, and ever-to-be-remembered mother, who receives and properly uses the fruits of her bountiful hand! These remarks, of course, apply to our latitude where these fruits are raised, but it will be found in all climes that there are fruits of corresponding qualities, whose effects aid nature in keeping up a healthy condition of the system.

Next, a word about fasting. If people would enjoy good health fasting should only be resorted to in obedience to physiological requirements. While fasting, the solid constituents of the blood decrease rapidly. It is customary, even in the nineteenth century, for our rulers, moved by a mistaken religious sentiment, to appoint days of fasting, which, unhappily, are generally observed exclusively by the very people whose abstemious and religious lives not only render them



unnecessary, but whose bloodless condition makes it really a sin for them to fast. It is said that "the monks and the anchorites of old sought to serve God and win an immortal crown by spending their lives in self-inflicted penances and mortifications, the severity of which seems almost incredible. It is related of them that they would live for years in cells and caves scooped out of rocks, which were scarcely large enough to turn round in. They would load themselves with heavy crosses and chains ; or put collars and bracelets of massive iron about their limbs. They would stand in uncomfortable attitudes until permanently deformed ; or look at the sun without winking until they were blind. They would pass many days without food, many hours without sleep, and many years without speaking. One of the most celebrated of these ascetics, Simeon Stylites, lived on the top of a column sixty feet high, for thirty years, exposed alike to the heat of summer and the cold of winter, and at length died without descending !" All of these things look ridiculous to people nowadays, just as the present custom of fasting will ultimately appear to coming generations. There is not a particle of doubt but that fasting would do thousands of people good, but the days appointed for the purpose are only in exceptional cases observed by these ; while pious and weakly men and women who cannot possibly afford to fast, almost invariably do so, most scrupulously, much to their injury. Fasting, unless called for to counteract the effects of gluttony, also deranges the stomach. This organ must have its due and regular supply of aliment to preserve the digestive machinery unimpaired. Parents should never punish their children by depriving them of their dinner, as is sometimes the practice. A dinner neglected to-day, prepares an unnatural appetite and a weak stomach for to-morrow. A plain dinner, in place of the usual family dinner, would answer just as well for a punishment for a child, and physically do him good ; and plain living for the glutton would be better than fasting, while regularity in eating is important on fast days as well as on others.

A few remarks on regulating the diet and selecting the food according to the condition of the bowels, and I will close this essay. Many people predisposed to constipation, and others affected in an opposite way, are ever hitting wrongly in their eating. Those who are habitually costive should not eat their meats and vegetables cooked brown ; nor such binding food as boiled rice, boiled milk, wheat-bread toast, etc. Such things will do for those who are predisposed to excessive and too frequent movements of the bowels. Nor should the latter eat meats rarely cooked, nor brown, Graham, and corn bread, hominy, baked beans, or other relaxing articles of food. These are just suited to constipated people. Among fruits—oranges, figs, sour apples, etc., are well known as relaxing in their properties ; while sweet apples, raspberries, blackberries, black currants, and all fruits

having a pulsating action are binding. Consequently fruits should be avoided in winter season suited to the contracting or inactive condition of the vessels.

A summary of all other matters regarding food and diet would be somewhat long, were they not treated upon in Chapter Second. I will, therefore, leave this subject and invite the reader's attention to

### **The Physiological Instruction of Children.**

IN view of the startling want of knowledge and the growing cost of physiological ignorance, an essay bearing the above title may properly find place in this chapter. An essay in the second chapter, as well as facts appearing in various pages of this book, exhibit the necessity of progressing some radical course for the proper instruction of children in regard to their bodies, the organs composing their bodies, and the functions of those organs. In our favored country every district in our cities, and every village in the rural regions, has its school house. Now, is a kid wledge of the alphabet, of spelling, of reading, of writing, of grammar, of arithmetic, of history, of philosophy, etc., more important than a knowledge of anatomy, physiology, and hygiene? Some schools, public and private, have introduced physiological works, which treat in a "gingerly manner," of the human system. They are doing good, but are not just what we want. The most important organs, and those which are most abused, are so delicately alluded to, if spoken of at all, that the student obtains little information regarding them. In our large public schools, academies, and colleges, teachers, male and female, should be appointed to attend to the anatomical, physiological, and hygienic departments, where children and youths should be classed according to age and sex, and instructed, not in the technical, jaw-breaking name of each nerve, muscle, and bone (these may be acquired in a medical college), but in the *uses*, and consequences of the *abuses*, of the various organs of the body, not omitting those most sinned against—the organs of generation. To girls just entering womanhood, lectures should be given on conception and pregnancy, and the duties attending maternity—on every subject, in fact which prepares them to become the healthy mothers of healthy children, when they shall be ready to assume such responsibility. In smaller village-schools, although as thorough training may not be practicable in this department, a very successful plan may be adopted where but one teacher is employed. A female should be kept in the instructor's chair during the summer, and a male teacher during the winter—a custom not uncommon now in many country places, as a matter of economy. These teachers should be supplied with two sets of plainly written lectures on all the organs, functions, diet, etc., suited

to various ages. One set of lectures should be adapted to girls, and the other to boys. In summer the girls should be classified according to age, and daily, during the boys' recess, the teacher, with such assistance as she might select from the older female pupils, should deliver, in as effective a manner as possible, to the various classes, a lecture appropriate to each. In winter, the male teacher should pursue the same course with the boys, during the recess of the girls. These lectures could be interspersed with such further instruction as the teacher might be qualified to give. A good manikin would be a profitable investment for any school, large or small, with which to illustrate the instructions given in this branch of study. Anatomical plates might also be obtained for school purposes, exhibiting the formation of the sexual organs, or those organs which are the more commonly injured in boyhood and girlhood—those which Nature instituted for perpetuating the human family. Some such plan will be carried out in a not far distant future, depend upon it. Let us all try and hasten the day. It is necessary, however, that something be done immediately. Boys and girls are annually destroying themselves or making wrecks of their constitutions, for the want of physiological instruction. Parents must take this matter in hand, until our institutions of learning are complete in this respect. If unwilling to counsel their children themselves, then they should throw in their way books containing the needful information. Almost daily am I receiving letters from young men and women, who commence their epistles with something substantially as follows: "If I had only read your 'Plain Home Talk' five years ago, I should have saved myself the necessity of addressing you now." It should be borne in mind that if children do not obtain physiological information from proper sources they learn enough to contract vice through hidden and vitiated channels, and sooner or later the physician is consulted for the relief of diseases which never would have presented themselves if parents had religiously discharged their whole duty.

#### **Mental and Physical Recreation.**

These are both necessary to the preservation of health. In this busy practical age, the mental and physical energies are too much concentrated upon money-making. Business men wear themselves out in their counting-rooms, and die just as they are about to reap the golden fruit of their labors, having denied themselves all social and physical enjoyment, with the delusive promise to themselves and their friends, that after a certain end is attained, they will give rest to their over-worked faculties. This end reached, another one is substituted, and still another, till the worn-out, cheated brain seeks in the repose of death that rest which its possessor denies it in the whirl of busy life.

The wealthy man who pursues his avocation of doing nothing with such idleness of purpose as to induce depression of spirits, and thereby enfeeble both mind and body. His imagination becomes tired at grasping empty shadows, and his faculties wear themselves out in striking at nothing.

FIG. 2.



HAGGETT'S EXERCISE.

The wealthy man who often pursues his avocation of doing nothing with such idleness of purpose as to induce depression of spirits, and thereby enfeeble both mind and body. His imagination becomes tired at grasping empty shadows, and his faculties wear themselves out in striking at nothing.

Many people mistakenly imagine that mental and physical recreation consists in idling away time, while it really consists in doing something all the while, but with such a change of thought and action as to give rest to those powers which are the more constantly employed. There is, for instance, but little recreation in a game of chess for a man who has been employed in the counting-room all day. His play should be out of doors, and his diversions of a character to free the mind from calculation, and give healthy exercise to the enervated muscular system. The farmer may advantageously shorten his days of toil, and

promotes health of body and grace of motion. It has been remarked that a young woman fond of dancing, traverses, in the course of a single season, about 400 miles, while no lady would think of walking that distance in six months. Nor is it simply by the exercise of the muscles, and grace of movement, that benefit is derived. The commingling of the sexes is highly beneficial. In an assemblage of ladies and gentlemen where there is almost constant contact of hand with hand, and interchange of sentiment, there is also an interchange of sexual magnetism, which imparts a daintier glow than paint is capable of giving to the cheek of the maiden or matron, and to those of the "sterner sex" who participate in these festivities, it gives mental and muscular vivacity never derived from association of gentlemen alone. At the opening of dancing *soirées*, the ladies generally begin the festivities with cold, clammy hands and feet, but after a few commands from the prompter of "right and left, all around" their circulation becomes healthful, and the pleasant temperature of the hand is an evidence that the feet too have become warm by exercise and masculine magnetism. Nature has ordained it, and man-and-woman-kind cannot disregard the law that sexual isolation impairs the physical health, and renders the mind more or less fretful, peculiar, and taciturn. It still further enfeebles the nervous systems of the weak, and inaugurates nervous derangements and mental eccentricities in the strong. It makes man rude and gross; it makes woman weak and capricious. Had it not been intended that women and men should commingle in their work and play, the earth with its flowers and birds would have been given to women, and the moon, with its rocks and arid mountains, would have been the abode of men, and like some of the representatives of the lower order of animal life, each sex would have had within itself the power of reproduction. But enough on this point. If the reader is interested in this partial digression, he may turn to the essay in Chapter Second, on Sexual Isolation.

Parlor or light gymnastics, as introduced by the late Dr. Dio Lewis, may be pronounced "the king and queen of indoor exercise." This system of gymnastics encourages the commingling of the sexes in physical movements, which are so devised as to bring every muscle of the body into exercise. It possesses all the social and magnetic charm of dancing, while the movements more fully and uniformly develop the whole muscular system. Especially is this remark true when placing light gymnastics in comparison with the modern fashionable style of dancing, which precludes all lively motion of the limbs, or other parts of the body. The gymnastic march brings the sexes together in a frolicsome exercise, which gives as much motion to the limbs as the old-fashioned "jig." The ring exercise again unites the sexes in movements and attitudes which bring into play every muscle belonging to our wonderful bodies. With the wooden dumb-bells and wands, a

series of exercises may be indulged in at home or in the class, which call into play muscles which men or women of sedentary habits hardly know they possess. The "breathing exercises" give ladies, who, from long habit of pernicious dress and short breathing, might imagine their lungs were no larger or deeper than a chicken's crop, some rational idea of their respiratory capacity. In the vocal exercises, the voice receives not only cultivation, but an increase of strength, and these, combined with the breathing exercises, afford an excellent medicine for people of a consumptive diathesis. In the class, all of these movements are made under the inspiration of music, and music itself is better than medicine for many people. "Luther and Milton found the greatest solace in music." "Nothing," said Alfieri, the Italian tragic poet, "so moves my heart, and soul, and intellect, and rouses my very faculties like music; almost all my tragedies have been conceived under the immediate emotion caused by music."

There is one peculiar advantage which light gymnastics possess over dancing, so long as the latter remains in disrepute among strict religionists, and that is, they are encouraged and patronized by the clergy, and no one could reasonably object on religious grounds, if they were introduced as a part of the education of children in all the schools, or made a part of the festivities at ministers' donation parties, and social entertainments of all kind, public or private, religious or secular.

Parlor gymnastics have been considerably neglected of late years. When introduced about the middle of the nineteenth century they were all the rage. It would be well for the rising generation to obtain Dr. Dio Lewis's book, which teaches and illustrates the movements in light gymnastics, and bring them to the front once more. They are graceful. They are beneficial. They are greatly enjoyed by young people.

Gymnastics originated with the ancient Greeks, who made it a rule to spend not less than two hours each day in physical development. Their children were required to take exercise in a nude state, so as not to encumber the muscles while undergoing motion and development. And here I may say, that one of the peculiar advantages of light gymnastics over dancing is, that in all classes where they are taught, the men are required to dress in loose trousers and blouses, and the ladies in loose-waisted and short dresses. Bathing was religiously attended to by the Greeks of old, and every conceivable plan was devised and practiced to build up and strengthen their physical organism. They despised themselves for any manifestation of physical weakness. The Spartans were the first to require their women to be good gymnasts. They were not allowed to marry till they publicly exhibited their proficiency in this kind of physical exercise. In our day, the Germans seem to have some of the spirit of the ancient Greeks.

They give much attention to gymnastics, both light and heavy; but among our American people, the credit is due to Dr. Lewis for having perfected and introduced a system of gymnastics suited to all ages, and to both sexes, and conducted like dancing to the time of inspiring music. Those not familiar with his system, and who may feel interested in looking into it, may, as before intimated, find at the book-stores an illustrated work by Dr. L., descriptive of the series of exercises which he recommended for muscular development. Swimming may

FIG. 94.



THE SWIMMER.

When you swim, imitate the frog.

One of the most extensive and finely appointed bathing establishments in the world is in San Francisco. This was erected and bountifully supplied with every convenience by the late Mayor Sutro. It covers five acres and contains several large swimming-tanks of different temperature, so that the swimmer can select the one he likes. One can move his arms and limbs in the Sutro baths under the inspiration of music, as an excellent band is present during the most popular hours to enliven the exercises. Boston doubtless comes next to San Francisco with its twenty-three public baths, and probably stands at the head of all cities of the United States in respect to the number of such establishments. Then, too, at the "Hub," they supply, at the expense of the

be reckoned among the accomplishments which promote physical health. Buoyed up by the water, the limbs are at liberty to move without impediment, and while the arms are moving in such a way as to develop the chest, shoulders, and back, the action of the limbs strengthens their own muscles and those which are remotely connected with them. This exercise is not available to all, nor can it be enjoyed at all seasons unless it be in cities where facilities are provided by individual enterprise or municipal government.



city treasury, teachers to instruct in the art of swimming. In 1898 3,500 children were taught to swim, according to the statement of Mayor Josiah Quincy. The number who enjoyed the baths during that year was 1,900,000. "The expense to the city for all this," according to the Mayor, "was about \$38,000, paid mostly in salaries, and the average cost of each bath was about two cents. When we consider the incalculable benefit to the public," remarked the Mayor, "I believe this money was a tremendous factor in the development of the health and morals of Boston."

For those living near rivers, lakes, or the ocean, or for those who visit the seaside in summer, bathing is a recreation in which both sexes during the months of the year when exercise is apt to be neglected, may indulge freely and greatly to their advantage, because it cleanses and invigorates the skin at the same time that it develops every muscle of the body. The art of swimming is so easily acquired that those who make a practice of bathing should also learn to swim. Many are injured by bathing who would be benefited by swimming. It is never well to creep or step cringingly into the water. The slow movements, the fear, the low temperature of the water, all tend to drive the blood to the head, and the bather, under these circumstances, emerges from the water with chills and disturbed circulation. Not so with the swimmer. He plunges in with the alacrity of the frog; his head is as cool as his body; his motions to keep afloat send the blood frolicking through the body to its extremities. He comes out of the water with a glow of warmth. A little friction with a towel makes him feel as if he had experienced a new birth. There is no reason why women, as well as men, may not swim. There is no better fun for a party of girls and boys than to put on bathing suits and imitate the pranks of the finny tribes in the water. I have seen many expert female swimmers. One young woman of my acquaintance, who recently acquired the art, in one brief summer expanded her chest several inches by the exercise, so much, indeed, as to attract the attention of her friends on her return from the seaside. Her avowed experience was that bathing injured her. Before learning to swim, if she entered the water she came from it cold and shivering, but so soon as she became a swimmer, her aquatic exercises became beneficial, and were no longer attended by the recession of the blood from the extremities. A word of caution is not to be omitted. Do not remain in the water too long. The difference in temperature between the water and the human body is usually very considerable, and there is rapid giving-off of the caloric of the latter to the cooler surrounding element. Fifteen to twenty minutes should be the limit. I have spent my summers for more than thirty years at popular seaside resorts, and I have not failed to observe that those men and women who stay in the water for thirty or forty minutes, or in some instances, an hour or two,

die, get ill, or give up the exercise with the plea that bathing does not agree with them. Some one of these results has invariably happened to those who were reckless in their indulgence in this otherwise healthful and delightful exercise.

#### BICYCLE EXERCISE.

Among popular modes of exercise, outing, and "sport," bicycle riding is the "up-to-date" recreation at the beginning of the twentieth century, and has, without doubt, tempted more people of all classes to healthful effort than any other form of exercise. It has been taken up by men, women, and children, of all ages, from three to eighty, and is even being recommended as a new "cure-all" for a large variety of common complaints. Many physicians have not only experimented with its effects upon themselves, but also made a close study of the effects upon the people in general. Veteran riders have been subjected to inspection, to discover if any impairment of physique or function has been occasioned by it, but the tests thus far reported are very favorable to riding "the wheel." The lung capacity is markedly increased (about half an inch), and the heart (itself mainly a bundle of muscles) is somewhat increased in size and power—an effect which may in some cases be carried too far. In short, the whole muscular system shows development, for the muscles of the back, chest, and arms are largely called into action, as well as those of the legs. Even in the men who ride "hump-backed" it has not been possible to discover any permanent physical deformity, though the position is ungraceful, if not actually disgraceful. As Mrs. Alice Lee Moqué puts it,

"Then here's to the wheel! And the joy we feel  
When speeding from care away.  
To the bicycle strong I sing my song,  
Though it be but an humble lay."

Nevertheless, those who carry bicycling to excess, especially when not originally extra robust, are likely to suffer from nervous exhaustion, or by over-strain of the heart and arteries; and many sudden deaths, some from apoplexy, have followed speedy or long "runs."

The greatest evil of this exercise is the tendency to overdo it, and while this may be said of any good form of exercise, the temptation to excess in speed or distance on the wheel is a propensity inherent in its fascinations. In reasonable moderation it seems suitable, with but few exceptions, to all who need exercise of any kind. Specialists in diseases of women seem pretty well agreed that even many having diseases peculiar to the sex need not be ruled off—that it may even help to relieve local congestion and improve the position of the affected parts by restoring a better muscular tone. It is generally known that the

treadle motion in working the sewing-machine is injurious to one having womb trouble, and it has been seriously urged by some writers that the bicycle must be equally objectionable, but the position of a woman on the wheel is widely different from that seated before a sewing-machine. In the latter instance the body is cramped, and the

FIG. 95.



A GROUP OF CYCLERS.

limbs are nearly in a horizontal position, confining and chafing the uterus with every motion of the foot. In the former the body is or should be nearly erect, the limbs nearly straight, and there is neither downward pressure nor friction brought to bear upon the delicate reproductive system. Facts are better than theories, and those who have the best means of judging are unanimous in the opinion that the bodily position and action in working a sewing-machine are no more like those employed in riding a wheel than the position when sitting is like that when standing. In cases of functional nervous disease, dyspepsia, constipation, and even gout and diabetes, the bicycle has been regarded as of good effect, and my own observations alike with these and uterine affections are in accord with the testimony of other

specialists. But how about the heart and the wonderful arteries and veins which circulate the blood ?

Sir Benjamin W. Richardson has taken much pains to observe the effects of bicycle exercise, and in a paper read before a medical society in London he summed up its favorable and unfavorable effects upon the heart and circulatory system. He is reported by the press to have said as follows :

"1. Cycling, when carried on with moderation, might in so far as the healthy heart was concerned, be permitted, or even recommended, by practitioners of the healing art. 2. In all cases of heart disease it was not necessary to exclude cycling. It might even be useful in certain instances—where the action of the heart was feeble, and where signs of fatty degeneration were found—since increased muscular exercise often improved the condition of muscle, and of no muscle more than the heart itself. 3. As the action of cycling told directly upon the motion of the heart, the effect it produced on that organ was phenomenally and unexpectedly great in regard to the work it got out of it. 4. The ultimate action of severe cycling was to increase the size of the heart, to render it irritable and hyper-sensitive to motion, the cycling acting upon it like a stimulant. 5. The over-development of the heart under the continued and extreme over-action affected in turn the arterial resilience, modified the natural blood-pressure, and favored degenerative structural change in the organs of the body generally. 6. A fact that had only been incidentally noticed in the paper was worthy of notice—namely, that in persons of timid and nervous natures—'neurotics'—the fear incidental to cycling, especially in crowded thoroughfares, was often creative of disturbance and palpitation of the heart, and ought to be taken account of as a piece of preventive advice. 7. In advising patients on the subject of cycling, it was often more important to consider the peripheral condition of the circulation than the central. Enfeebled or worn-out arteries might be more dangerous than the feeble heart, and when connected with a heart that was over-active were seats of danger. This same remark would, of course, apply to cases where there was local arterial injury, as in aneurism. 8. Venous enlargement seemed rather to be benefited than injured by cycling, and conditions marked by sluggish circulation through veins were often greatly relieved by the exercise. 9. There were three things which were most injurious in cycling—(a) Straining to climb hills and to meet head-winds ; (b) excessive fatigue ; (c) the process of exciting the heart and wearing it out sooner by alcoholic stimulants, and the omission of light, frequently repeated, and judiciously selected, foods."

Too much cannot be said against what is commonly called "scorching." Any amount of mischief has been done to many young men and women in racing on the wheel. Tests of endurance in this exercise, as

well as in all others, are to be deprecated. They bring disease and death to the riders and prejudice to a commendable means of exercise. Dr. S. C. Stanton, who has charge of the examination of recruits for the United States Army in Chicago, has "caused a sensation among medical men by declaring that an habitual fast rider of bicycles, or a 'scorcher,' is unfit, physically, to serve as a soldier in the army." He has made this matter the subject of his severest tests in his examination of applicants for enlistment, and many men have been rejected because of a "bicycle heart," as the practitioner terms it, caused by excessive exercise in riding a wheel. The doctor says: "Persistent scorching or fast riding has a tendency to enlarge the heart, and thus interfere with its proper action. This being the case, the riders would be unable to endure the hardships that army life imposed, and should not be permitted to enter the service."

Dr. Patton, Chief Surgeon of the National Soldier's Home of Dayton, Ohio, is quoted by the *Providence Journal* as saying "that of the 5,000 soldiers in the Dayton Home, fully eighty per cent. are suffering from heart disease, in one form or another, due to the forced physical exertions of the campaign." "And," says the *Medical and Surgical Reporter*, "he made the prediction that as large a percentage of the athletes of to-day will be found twenty-five years from now to be victims of heart disease, resulting from the muscular strains that they force themselves to undergo. As for the likelihood of exercise to prolong life, it may be said that according to the statistics of M. de Solaiville there are more people living in France to-day who have passed the age of sixty than there are in England, the home of athletic sports. And there is probably no nation in Europe more averse to muscular cultivation for its own sake than the French. Great athletes die young, and a mortality list of Oxford rowing men published a few years ago showed that a comparatively small percentage of them lived out the allotted lifetime. Dr. Jastrow has demonstrated, in some very elaborate statistics, that men of thought live on an average three and a half years longer than men in the ordinary vocations of life."

This is disheartening to one who believes in, and enthusiastically advocates, rational exercise, but it is well to give it place here for the purpose of impressing upon the impulsive and reckless mind, as nothing else would, the importance of reasonable moderation in taking it. In one respect Dr. Stanton's views are quite sustained by mortality statistics. In England, of 10,000 deaths by various diseases, 620 are from heart disease, while in France there are only 290 from the same. But the figures are not as favorable for France as they are for England in deaths by apoplexy, consumption, pneumonia, and some other physical ills, and comparing the mortality of the two countries from all diseases, the rate is not far from equal, although a little in favor of

**France.** Not enough difference to lead to the conclusion that it is best for the Anglo-Saxon to give up muscular exercise for its own sake. Far better reform in the way it should be taken.

The young especially need cautioning and restraining, lest in their impetuous and emulative ardor they overtax their strength, and do themselves irreparable injury ; and the man of fifty or more years must remember that he has not the elasticity of youth, and may overstrain or burst a blood-vessel if he attempt to keep up the hot pace of men in their prime. Women, too, handicapped as most of them are by heavy machines, skirts, and muscles less trained to severe and continuous effort, should make haste slowly in their attempts to become experts, and be especially particular to have a comfortable saddle.

**"SHUT YOUR MOUTH."**

This may be said in an aggressive, rude, and offensive manner, but in this instance it is meant for good advice to the wheeler. It is not an uncommon practice for both men and women riding the wheel to have the lips parted, and in some cases the mouth quite open, and taking in the breath by the latter rather than through the nose, as Nature intends that we should do. The nasal cavity is well provided with all that is necessary to filter the air that we breathe. The lips were intended not only as ornaments to the face, but to protect the mouth from dust and bacteria. It is no unusual thing for a wheeler to complain of dryness of the mouth, and some even adopt the vulgar habit of chewing gum to awaken the salivary secretions and give moisture to the mouth. "Wheeler's Rests" have sprung up along the roadside, where soda-water, beer, and other drinks, both soft and strong, are provided for the thirsty cyclist. Some complain of sore throat. Both thirst and throat irritations can be avoided by resolutely compressing the lips, and breathing through the nose. Then, when returning from a spin, rinse the mouth, gargle the throat, and wash out the nasal passages with a solution of sulpho-carbolate of soda. For this purpose, put half a teaspoonful, or a little less of the latter, into a tumblerful of pure water. Let it stand a few moments until the salts are nearly or quite dissolved. The water will take up no more of the salts than is necessary to give the solution sufficient strength. Then use this solution as a mouth and nose wash and a throat gargle. If a little passes down the throat it will do no harm.

There are, in addition to equestrian exercises, dancing, gymnastics, swimming, and wheeling, various other sports which afford mental and physical recreation, such as golf, lawn tennis, croquet, billiards, tennis, base-ball, parlor and pond skating, etc., all possessing more or less merit ; but those should be chiefly encouraged which bring the sexes together, because they are not only more beneficial physically,



but also because women are too generally neglected, and too often left at home by fathers, husbands, and brothers, and even lovers, when they drop the cares of business for rest and relaxation. In addition to this consideration, the sexes should fraternize in their sports, in order that men may become more womanly and kindly, and women more manly and practical in their characteristics. We are slowly, but I think surely, approaching an age of greater sexual equality, and the race will be better and happier when it is reached. We have had enough of rough and heartless men, and of debilitated and babyish women. The lawyer and sheriff fatten on the former, and the latter mainly supply the bread and butter wherewith the doctors are fed.

### Sleep.

Nearly every one who is not a baby sleeps too little. Babies are in the way, and are dosed with soothing syrups and put to sleep—"the troublesome little things!" But when they grow up, excess of sleep is exchanged for too little. Business, social intercourse, and, in many cases, dissipation, occupy so many of the twenty-four hours, that rest is neglected. Many do not seem to know the value of sleep. They overlook the fact that it is the season of vital recuperation; that while the body is recumbent, the eyes closed, and the faculties at rest, repairs go on which are no less necessary for the duration of life, than for the health of every individual. "Without the proper amount of sleep," says Professor Hubland, "the vital energy is dried up and withered, and we waste away as a tree would, deprived of the sap that nourishes it. The physical effects of sleep are, that it retards all the vital movements, collects the vital power, and restores what has been lost in the course of the day, and separates us from what is useless and pernicious. It is, as it were, a daily crisis, during which all secretions are reformed in the greatest tranquillity and perfection." Tesla says: "I believe that a man might live 200 years if he would sleep most of the time. That is why negroes live to such an advanced age, because they sleep so much. The proper way to economize life is to sleep every moment that is unnecessary or desirable that you should be awake."

Many medical writers have given their testimony upon this subject, and instead of originating a new essay, it is hardly necessary to do more under this head, than to quote what has already been well-written. Dr. J. C. Jackson remarks:

"As a habit and fashion with our people, we sleep too little. It is admitted by all those who are competent to speak on the subject, that the people of the United States, from day to day, not only do not get sufficient sleep, but they do not get sufficient rest. By the preponderance of the nervous over the vital temperament, they need the recuperating benefits which sleep can afford during each night as it passes. A



far better rule would be to get at least eight hours' sleep, and, including sleep, ten hours of recumbent rest. It is a sad mistake that some make, who suppose themselves qualified to speak on the subject, in affirming that persons of a highly wrought, nervous temperament need—as compared with those of a more lymphatic or stolid organization—less sleep. The truth is, that where power is expended with great rapidity, by a

FIG. 98.



ALL ASLEEP.

constitutional law, it is re-gathered slowly ; the reaction, after awhile, demanding much more time for the gathering up of new force than the direct effort demands in expending that force.

“Thus, a man of the nervous temperament, after he has established a habit of overdoing, recovers from the effect of such overaction much more slowly than a man of different temperament would, if the balance between his power to do and his power to rest is destroyed. As between the nervous and lymphatic temperaments, therefore, where excess of work is demanded, it will always be seen that, at the close of the day's labor, whether it has been of muscle or thought, the man of nervous temperament, who is tired, finds it difficult to fall asleep, sleeps perturbedly, wakes up excitedly, and is more apt than otherwise to resort

to stimulants to place himself in a condition of pleasurable activity. While the man of lymphatic temperament, when tired, falls asleep, sleeps soundly and uninterruptedly, and wakes up in the morning a new man. The facts are against the theory that nervous temperaments recuperate quickly from the fatigues to which their possessors are subjected. Three-fourths of our drunkards are from the ranks of the men of nervous temperament. Almost all opium-eaters in our country—and their name is legion—are persons of the nervous or nervous-sanguine temperaments. Almost all the men in the country who become the victims of narcotic drug-medicine are of the nervous or nervous-sanguine temperament."

Every medical man of much observation, and every intelligent non-professional man, who has given any attention to the laws of health, will not hesitate to indorse Dr. Jackson's views, as expressed in the foregoing paragraphs. People of the nervo-sanguine temperament are not so successful at manufacturing, as they are extravagant in expending, the vital forces, and as you would control the prodigality of a money spendthrift by keeping him employed, so you should control the prodigal expender of nervous vitality by keeping him asleep as many hours of the twenty-four as can be done without recourse to pernicious drugs.

Insanity often results from want of sleep. "The most frequent and immediate cause of insanity," says Dr. Cornell, in the *Educator*, "is want of sleep. Notwithstanding strong hereditary predisposition on the part of some people, if they sleep well they will not become insane. No advice is so good, therefore, to those who have recovered from an attack, or those who are in delicate health, as that of securing by all means sound, regular, and refreshing sleep."

Dr. Spicer says: "There is no fact more clearly established in the physiology of man than this: That the brain expends its nerves and itself during the hours of wakefulness, and that these are recuperated during sleep; if the recuperation does not equal its expenditure, the brain withers—this is insanity. Thus it is that in early English history, persons who were condemned to death by being prevented from sleeping, always died raving maniacs; thus it is also, that those who starve to death become insane; the brain is not nourished, and they cannot sleep."

With a little sensible advice, which I quote from Dr. Hall's *Journal of Health*, as to how to go to bed, I will close this essay. "In freezing winter-time," says Dr. Hall, "do it in a hurry, if there is no fire in the room, and there ought not to be unless you are quite an invalid. But if a person is not in good health, it is best to undress by a good fire, warm and dry the feet well, draw on the stockings again, run into a room without a fire, jump into bed, bundle up, with h-

and ears under cover for a minute or more, until you feel a little warmth; then uncover your head, next draw off your stockings, straighten out, turn over on your right side and go to sleep. If a sense of chilliness comes over you on getting into bed, it will always do you

FIG. 26.



PREPARATION BAND AND TUBE.

the fact, that the skin is full of little sewers, called pores, through which are emptied out from the blood five-sevenths of all its impurities. It must be remembered that while the intestines carry off one kind of waste matter, and the bladder and urethra another, there are over

an injury; and its repetition increases the ill effects without having any tendency to 'harden' you. Nature ever abhors violence. We are never shocked into good health. Hard usage makes no garment last longer."

One word more before concluding. It is really quite important that a person should retire on the right side. This position favors the passage of the contents of the stomach into the duodenum, or lower stomach. It is well that what remains in the stomach on going to bed, should be disposed of, and that position which will the best conduce to the digestion and removal of this matter, is the one which should be adopted. By the time the sleeper has become tired of resting on his right side, unless he has taken a late supper, his digestive organs will have been sufficiently relieved to allow him, without disadvantage, to turn upon the left. Sleeping upon the back is a bad habit, because the pressure of the contents of the bowels upon some important arteries, interferes with a free circulation of the blood, resulting in frightful and disagreeable dreams and nightmare.

#### Cleanliness.

Insomuch as uncleanness is the parent of epidemics and the nesting places of microbes, so is cleanliness a preventive of disease. Many do not know, while others who do, overlook

*twenty miles* of perspiratory tubes engaged in disposing of effete matter, unless obstructed by neglect; and uncleanly accumulations on the skin are, in a measure, as injurious to the health as constipation or suppression of the urine. Fig. 97, on the opposite page, represents, magnified, one of the perspiratory glands and tubes. Dr. Wilson has counted 3,528 in a square inch, on the palm of the hand, of these minute but useful organs. When the skin is neglected, these tubes, or pores become literally dammed up, and if nature cannot force a passage through them for disposing of effete matters, her next attempt is to throw them out in the form of pimples, ulcers, or boils. If this effort is not successful, they remain in the circulation, poisoning the blood and making that fluid, which should be the dispenser of health, the fountain of corruption and disease.

Daily bathing is not indispensable to protect the outlets of these little sewers. Many people cannot bathe every day. The friction of the hand over the whole surface of the body, with an occasional bath, will answer in many cases. Comparatively few, however, are injured by an excess of soap and water, and every one who is not advised by his own symptoms, or his physician, not to do so, may use plenty of water without injury by employing that temperature which best promotes subsequent good feeling. The after-effect is a good monitor to govern the frequency of bathing, and to direct as to the temperature most conducive to individual health. But while keeping the excretory pores active, it is also necessary to see that the liver and kidneys are performing their offices, for if they are not, the active skin will become the outlet of an undue share of the waste matters of the system, and cause odors to be emitted which are obnoxious to all who value pure air, and especially to those who have sensitive olfactories.

If men and women were careful in eating and drinking, it would be necessary that all the outlets of waste matter should be kept free from obstruction; but when excesses in eating and drinking are the rule, rather than the exception, when the mouth and the stomach are made receptacles of everything which tickles the palate, whether the system requires it or not, it becomes still more necessary that the various sewers which nature has provided for the emptying out of useless matter, should be kept active and free from everything that obstructs the performance of their functions. A good breath is greatly dependent upon the healthful activity of the skin, liver, and kidneys. If these are all in working condition, the rubbish of the system passes off freely. If they are not, it goes through a process of decomposition, and sends its odorous gases through the blood to the lungs, from which they are carried out with the vapors exhaled. Nor is this all. They are *wo* in the human system than dust in the delicate works of a watch,

### Pure Air.

Little need be said under this caption in addition to what may be found in the essay entitled, "The Atmosphere We Live In;" but the importance of pure air as a preserver of health is so great that this chapter would be incomplete without at least an allusion to it. "People have often said," remarks a writer in the *Scientific American*, "that no difference can be detected in the analyzation of pure and impure air. This is one of the vulgar errors difficult to dislodge from the ordinary brain. The fact is that the condensed air of a crowded room gives a deposit, which, if allowed to remain a few days, forms a solid, thick, glutinous mass, having a strong odor of animal matter. If examined by the microscope, it is seen to undergo a remarkable change. First of all, it is converted into a vegetable growth, and this is followed by the production of multitudes of animalcules—a decisive proof that it must contain certain organic matter, otherwise it could not nourish organic beings. A writer in Dickens's *Household Words*, in remarking upon this subject, says that this was the result arrived at by Dr. Angus Smith, in his beautiful experiments on the air and water of towns, wherein he showed how the lungs and skin gave out organic matter, which is, in itself a deadly poison, producing headache, sickness, disease, or epidemic, according to its strength. Why, if a few drops of the liquid matter obtained by the condensation of the air of a foul locality introduced into the vein of a dog, can produce death by the usual phenomena of typhus fever, what incalculable evils must it not produce on those human beings who breathe it again and again, while rendered fouler and less capable of sustaining life with every breath. Such contamination of the air, and consequent hot-bed of fever and epidemic, it is easily within the power of man to remove. Ventilation and cleanliness will do all, so far as the abolition of this evil goes; and ventilation and cleanliness are not miracles to be prayed for, but certain results of common obedience to Nature's laws."

Few people take in enough fresh air to keep their systems well supplied with electricity. Thousands of women in our large towns do not venture out of their houses oftener than once a week in cold weather, and these houses are protected by patent weather-strips, and every possible device for excluding the breath of heaven; and when the dear creatures do summon the courage to face a north or east wind, they so envelop themselves in heavy clothes, furs, and veils, that they can hardly see out. Beneath all this muffling, they breathe over and over again their own exhalations, with scarcely enough fresh air to even partially disinfect them. Of course their verdict is, on re-entering their residences, that it does not agree with them to go out; so they stay in until some necessity compels them to go out again. Professional



men cloister themselves in their offices, and work up with hard thinking what little vitality they derive from imperfectly digested food. Business men stick to their counting-rooms with as great pertinacity as the bull-dog hangs to the nose of a stag, and expend their nervous forces in business-planning, and belaboring their brains with long columns of figures. With such practices in vogue, the stone, the brick, the mortar, the double window-sashes, the weather-strips, etc., which are devised by cunning hands to protect us from the storms of winter, and to shelter us from the oppressive heat and dust of summer, form so many barriers between man within and the health-giving element without. With stoves and hot-air furnaces to furnish heat to destroy what little life the confined atmosphere originally possessed, he breathes over and over a few hundred cubic feet of air, as if it were an expensive commodity delivered at the door by the conscienceless express companies, instead of the free gift of Nature, which can be had by opening a door or window.

Besides opening our houses for the ingress of pure air, our clothes should not be made of such waterproof material as to exclude it. Besides going out to parks, cleanly streets, and the country for it, an air-bath before going to bed is an excellent promoter of sleep. Dr. Franklin found this so; and many philosophical men and women nowadays take air-baths. An intelligent woman informed me that she could not sleep without spending an hour in a nude state in a well-ventilated room before retiring. This may appear a little inconsistent with Dr. Hall's suggestion as to making haste into bed; but I have no doubt that there are many people who would be benefited by this practice. Such, for instance, as are full of blood and animal caloric; and those who, instead of experiencing a chill, would find simply a sense of coolness creeping over the skin, followed by a reaction immediately after covering up warmly. It would not do with the thermometer at 40°, but would answer at a temperature of 68°, 70°, or 72°. We breathe through the pores of the skin as well as by the lungs. These microscopic lungs cannot be safely insulated from the air.

Especially should the sick-room be well-ventilated. Not only should the air therein be cautiously changed in inclement seasons, but disinfectants should be freely used. It is not difficult to obtain these, nor are they expensive. A large bowl of water standing by the bedside will absorb an immense quantity of impure gases. "Few," remarks a writer, "are aware of the valuable antiseptic properties of charcoal in the sick-room, or of its purifying effects in crowded chambers. A dozen pieces, the size of a hazel-nut, placed in a saucer or soup-plate, daily moistened with boiling water, will, in the course of a week, have gathered their own weight in impure air. At the end of the sixth day they should be renewed, and the infected ones burned, as in cases of

disease they have gathered the poisonous exhalations, and are, therefore, no longer without danger." In sickness or health, we cannot afford to do without pure air, and as it comes to us without money and without cost, it is one of those priceless blessings which the poor may enjoy as well as the rich. Let us all have plenty of it. Next, let me call the attention of the reader to

#### Sunshine.

It is said that if a potato is put into a warm cellar with one small window, the potato will sprout, and that the leading vine will run along the floor of the cellar until it reaches the window, when it will make directly for it, and continue to grow in that direction as long as it can support itself. House-plants instinctively turn their leaves toward the windows, thirsty for sunlight. A running vine planted in a shady locality seems almost to possess intelligence in creeping around where the rays of the sun may fall upon it. Now, shall not mankind be as wise as the plant, or as sagacious as the potato ?

Dr. Moore, the metaphysician, speaking of the necessity of sunlight, says that : "A tadpole, confined in darkness, would never become a frog ; an infant, being deprived of heaven's free light, will grow into a shapeless idiot instead of a beautiful and responsible being. Hence," continues the same writer, "in the deep, dark gorges and ravines of the Swiss Valais, where the direct sunshine never reaches, the hideous prevalence of idiocy startles the traveller. It is a strange melancholy idiocy. Many of the citizens are incapable of articulate speech. Some are deaf ; some are blind ; some labor under all these privations ; and all are misshapen in every part of the body. I believe there is in all places a marked difference in the healthfulness of houses according to their aspect with regard to the sun, and those are decidedly the most healthful, other things being equal, in which all the rooms are, during some part of the day, fully exposed to the direct light. Epidemics attack inhabitants on the shady side of the street, and totally exempt those on the other ; and even in epidemics such as ague, the morbid influence is often thus partial in its labors."

Sunlight not only imparts vital magnetism to the extent of preventing disease, but it has been resorted to with success as a curative agent. One of our journals commenting upon the healing influence of light, remarks that, "Sir James Wylie, physician to one of the Emperors of Russia, attentively studied the effects of light as a curative agent in the hospitals of St. Petersburg ; and he discovered that the number of patients who were cured in rooms properly lighted, was four times greater than that of those confined in dark rooms. This led to a complete reform in lighting the hospitals of Russia, and with the most beneficial results. In all cities visited by the cholera, it was universally found



that the greatest number of deaths took place in narrow streets, and on the sides of those having a northern exposure, where the salutary beams of the sun were excluded. The inhabitants of the southern slopes of mountains are better developed, and more healthy than those who live on the northern sides; while those who dwell in secluded valleys are generally subject to peculiar diseases and deformities.

"The different results above mentioned are due to the agency of light, without a full supply of which, plants and animals maintain but a sickly and feeble existence. Eminent physicians have observed that partially deformed children have been restored by exposure to the sun and the open air. As scrofula is most prevalent among the children of the poor in crowded cities, this is attributed, by many persons, to their living in dark and confined houses—such diseases being most common among those residing in underground tenements."

In scrofulous affections and bodily deformities, Dr. Edwards advised isolation in the open air, and nudity where it would not be incompatible with comfort, as calculated to restore the sufferer. People having a consumptive diathesis, or those having a consumptive ancestry, should pay particular attention, in the choice of a location for a dwelling, to select one which has a southern exposure. Sick people are too apt to be regardless of their surroundings, and depend entirely upon their physician to cure them. A thoughtful man, when he is affected with illness, will seek to discover the cause, and also the influences surrounding him which may aggravate the complaint. On making an investigation, he may not only find that his rooms are not well ventilated; that the location is not free from swampy dampness; but that his dwelling is so situated behind hills, or under so much shade, as to entirely shut him in from the light of the sun. Discovering these disadvantageous conditions, he should at any sacrifice of business or property, if he values health and life, betake himself to some spot where he may secure all of nature's agencies for his recovery.

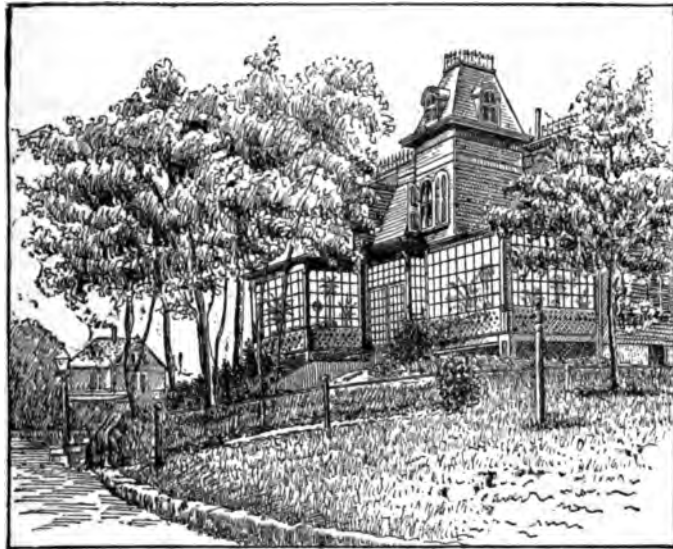
People living in or owning houses with verandas can have no idea, without trying it, how much health and pleasure may be derived from enclosing the latter in glass. I had to live over half a century before finding it out. My city residence, which is almost wholly occupied with my professional business, does not admit of this improvement, but I have it and enjoy it at my country home, eighteen miles from the city, the house having a southern frontage.

On the coldest days of winter when the sun shines, the thermometer will rise in such an enclosure from 20° to 30°, and when the temperature outside is not below 40° one can usually enjoy sitting in it. It is a saving of fuel as well as a builder of health. You who have a veranda should try it if you have not done so already. The enclosure should be so constructed that it can be easily removed in warm weather

and stored in some convenient place until the return of the cold season. It should have windows for ventilation.

Occasionally, some one daily exposed to the sun in the heat of summer, gets an overdose of the curative agent, and has an attack of sunstroke. All active medicines are injurious taken in overdoses; but sometimes the sun's heat is censured for what bad habits have induced. If a man eats and drinks excessively, or fires his blood with "camphene whiskey," he is more liable than anybody else to have sunstroke.

FIG. 98.



THIS IS HOW AN ENCLOSED VERANDA LOOKS ON THE OUTSIDE.

Some medicines become injurious by mixing, and it could hardly be supposed that the pure sunlight would mix well with the vile drinks of our low groggeries. As, however, the lightnings of heaven sometimes kill innocent people, continuous exposure to a summer's sun may, in some cases, strike down sober, temperate men. To avoid this, those who are compelled to work in the sunlight during the hottest days of the year, would do well to wear a wet napkin or handkerchief on the top of the head, under the hat. The farmer or gardener has something still better in the cabbage-leaf which may be dipped in water and worn in the same way. It should be said in this connection that the heat of the sun alone can hardly cause sunstroke. As already remarked in

another chapter, the atmosphere must be so humid as to interfere with electrical radiation from the body to induce the malady. In some of the warmest climes where the atmosphere is dry, sunstroke is not known. Dr. Sanborn, in the *British Medical and Surgical Journal*, says that "siriasis (heat stroke) is unknown in many of the hottest parts of the world." He seems to think it is produced by a specific germ. If so, the sun has nothing to do with the trouble except to produce the necessary warmth to promote the life and activity of such germ. My own view of it, however, has already been indicated.

Actual sunstroke requires stimulants to be applied, and not bleeding or debilitating medicines as in the treatment of apoplexy. A writer remarks that it "resembles apoplexy in some of its external features, and is often mistaken for it, but in truth is very different; the brain is not congested as in that disease; no effusion of blood or serum on the brain's surface; the patient is pale, cold, and quiet; or, as is often the case, he is convulsed and has tremors like one in delirium tremens, both on approaching and recovering from insensibility—his pulse weak, quick, and frequent, 100 to 160. On the contrary, in apoplexy he is flushed, heaving, and stertorous, or his breathing is very hard—pulse full, strong, and slow." In view of what has been said of the true causes of sunstroke, let no one be afraid of sunshine because of occasional cases of this kind of prostration.

If statistics could be obtained regarding those who die directly or indirectly from want of sunshine, we should find that this class would number a thousand to one who dies of an overdose. People in the country are apt to bury themselves beneath the foliage of shrubs and trees, and bid defiance to the few rays that do penetrate, by closing the blinds which shelter the parlor windows. Mechanics and a great many of the business men in cities, are contented to pursue their avocations all day by gaslight. There is said to be an office in Nassau Street, in this city, the window of which is so shut in by its contiguity to another building, that the sunlight never enters it; and that every one who has occupied it for the past ten or fifteen years, died of consumption.

People who break away from their business for summer recreation, and make tours to the watering-places, think that they derive great advantage from change of air. It is true that they do. The qualities of the air are greatly modified and affected by the geological formations beneath the surface, and the vegetable products which present themselves above; so that one cannot breathe the air of any of these locations, without extracting certain properties which the system requires. In this way, change of air frequently proves highly beneficial; but often benefits are attributed to this cause, which are really due to exposure to sunlight. When people allow the sun to paint their faces brown, torpid livers are less liable to paint them yellow.

### Good Temper

And, I might also add, a clear conscience, are necessary for the preservation of health ; but, in my essay on the " Violation of the Moral Nature," all has been said that need be in regard to the importance of having the conscience free from a sense of self-accusation and remorse. I will, however, say something in this place about good temper and its beneficial effects upon the system. Just exactly to that degree in which men and women are improved by a cheerful, unprejudiced condition of mind, they are physically injured by a morose, bigoted, and selfish habit of thought. Anger, jealousy, envy, distrust, and personal dislikes, all tend to induce nervous diseases. When the white man hates the Indian ; when the Irishman detests the colored man ; when the Christian despises the Jew ; when the Yankee feels like fighting the " cockney ;" when the Hindoo, laboring under prejudice of caste, will not associate with the European ; when the Mohammedan regards the Christian as a hog ; when a full-blooded African disdains to associate with a mulatto or quadroon ; there are certain mental emotions experienced, which contort the features and disturb the harmony of the whole system. The indications of such feeling are at once conveyed to the face, and, to some extent, leave their impress on the facial muscles, giving to the individual habitually indulging therein, a countenance more or less disagreeable. They make themselves felt upon the nervous system, by irritating it, and disturbing the harmonious circulation of the nervous forces. They also impair digestion and interfere with the healthy action of the liver.

Chronic grumblers are never really well. They cannot be. They keep their sensitive nerves constantly vibrating with discordant emotions ; yet grumbling is indulged in by people of all religions and nationalities. The farmer leans over his fence and grumbles about his crops. Showers have been too frequent and the ground is too wet ; or a drought is scorching his growing vegetables. The tradesman grumbles because trade is too dull ; or, when customers are coming in numerously, he grumbles because of overwork. Even the parson grumbles because his parishioners fail to " come to time " in requiting him for his labors in the pulpit. Grumbling gives the features a pinched, " sour-milk " appearance ; vitiates the gastric juices, and dries up the secretions. These effects are only just penalties on the person who allows his temper to be thus disturbed ; but his innocent family and friends suffer with him, as they are kept in a perpetual " nettle," and this induces nervous derangements in them. Many a good wife has been worn into her grave by a grumbling husband ; and many a good husband has been driven from intimate association with his family by a fault-finding wife. The children in either case are brought



up in a hot-bed of discontent, which makes its impress first on the buoyancy of their young spirits, and then on their nervous systems.

Petulance is worse than grumbling. Many people are like snapping bugs, that cannot be touched without snapping; or like rattlesnakes, that cannot be looked at without hissing from their throats and rattling their bones. Such folks are said to be "full of bile;" but the petulance causes the bilious condition, instead of the latter causing the petulance. Petulance often causes hysteria among women, and hypochondriasis among men. Artemus Ward said that "G. Washington never slopped over." Petulant men and women are constantly slopping over, and there is no nervous rest or happiness for those who get bespattered with their venomous utterances. Even dogs stand about them with ears and tail down, and with an increased susceptibility to distemper and hydrophobia. Perfect health is incompatible with a petulant disposition, and cannot be maintained by those who are compelled to associate intimately with petulant people.

Violent temper is worse than petulance. It is absolutely dangerous to life as well as to health. I have known people to bring on attacks of hemorrhage by indulging in explosive anger. Such tempestuous emotion causes congestion. At such moments the blood presses the brain, and jumps violently through the delicate machinery of the heart; it unduly fills the arteries and veins of the lungs; it completely arrests digestion, and suspends biliary secretion. All the vital machinery is clogged with the undue presence of the perturbed vascular fluids.

People who have naturally good temper deserve no credit for being habitually good-natured; but those who have a fretful disposition or violent temper, are censurable for indulging in grumbling or rage. There is no work so necessary and ennobling as that of rooting out inherited bad qualities. As soon as they are discovered the work should begin in earnest, nor should it be suspended till they are completely eradicated. If the aspiration for moral perfection is not sufficient to prompt this effort, then selfishness should, for every one desires to have health, and this is not permanently compatible with the indulgence of an irritable or violent temper. Move around good-naturedly. Let your soul shine out as brightly as the sun at noon-day. It will warm yourself within, and all those whom you hold dear without. It will promote harmony of action in your intricate physical machinery, and make all about you happy and more nearly healthy.

#### Keep the Feet Warm.

Almost every reader of this book is undoubtedly aware of the prevalence of cold feet. You, who are at this moment perusing these pages, may have cold feet, and think this condition of little consequence. You know your neighbor across the way is affected in the

same way ; and perhaps you know hardly any one who is not subject to cold feet, at least during the winter. The husband often jokes his wife in the presence of friends, "that her feet are like icicles," and the levity which follows shows the entire misapprehension on the part of the popular mind, of the serious character of the impaired circulation which is indicated by this affection. When there is little blood in the extremities, where do you suppose that fluid is ? It is certainly confined within the skin somewhere. Perhaps it has not occurred to your mind that the frequent headaches with which you are affected, arise from an undue supply of blood in the head ; or, that you have fluttering and palpitation of the heart, from a pressure of the fluid in that organ ; or, that the pain in your right side proceeds from the congestion of blood in your liver ; or that an affection of your lungs or stomach is caused by a pressure of blood in them. There is really no such thing as computing the number of those who die annually from cold feet, or, what is the same thing, from diseases induced by congestion of some vital part, or parts, at the expense of the feet, which are left without a sufficient supply of blood. Although cold feet do not directly kill the patient, warm feet would cure him, and the invalid dies because this equilibrium in the circulation is not established. Let us look for a moment into the cause of cold feet. It is probably known to most intelligent readers that the healthy action of the heart, and of all the arteries and capillaries, is dependent upon a generous supply of nervous stimulus ; and this nervous stimulus, I have already shown to be a kind of animal magnetism or electricity. Whenever, then, the vital forces become deficient in the extremities, there is an insufficiency of nervous stimulus given to them, and the arteries and capillaries become, as an inevitable consequence, sluggish in their action ; and this failure of the arteries and capillaries to perform their functions in the extremities, leads to an insufficient supply of blood in the feet, just as a defective pump will give an inadequate supply of water to a country kitchen. The blood may be too thick, or it may be loaded with impurities ; still if the arterial and capillary action is sustained by an abundant supply of nervous or magnetic force, the blood keeps moving to the feet and the toes are made warm by the presence of an abundance of blood. It is true, however, that if the blood is in a diseased state its circulation to the extremities is retarded, unless Nature supplies a sufficiently increased nervous stimulus to off-set this difficulty. This qualification does not in the least affect the accuracy of my first statement as to the cause of cold feet ; for it still remains true that the nervous forces must *precede* the blood circulation, and prepare the way for it, and that any means which may be used to supply, divert, or stimulate these forces in the bloodless part will, if followed up with reasonable patience, result in a cure.

To preserve the warmth of the feet, one of the first things necessary is, to keep them warmly dressed. I have alluded in the essay on "The Clothes We Wear," and also in a preceding essay of this chapter to the importance of dressing the feet and extremities as warmly as the shoulders and chest are dressed. The next thing to be observed is to avoid disturbing the harmony and force of nervous action in the arteries and capillaries of the feet by too much *fire* warmth. Holding the feet habitually to the stove, grate, register, or fireplace, will induce cold feet, even in those who are not subject to them, by relaxing the capillaries and arteries, and destroying the harmony of that nervous action which in health is ever busy in moving the blood through its natural channels, whether we are wrapped in unconscious slumber, or engaged in the festivities of the dance. Habitually bathing the feet in warm water will also, in time, produce arterial and capillary relaxation in the extremities. Those who occasionally have cold feet, and resort to hot-water foot-baths to cure them, obtain momentary relief, but the difficulty is made worse and worse every time the hot bath is resorted to. If there existed in all cases constitutional vitality enough, cold-water foot-baths would be excellent treatment for cold feet, as hot water really is for uncomfortably hot feet; for the reaction from cold baths is warmth, and the reaction from hot baths is coldness. In a great many, perhaps in a majority of cases, the vitality is too low to effect a warm reaction when cold is applied; while the less vitality a person has, the more certain are hot water applications to produce a cold reaction. Hence it will be perceived that popular habits are entirely wrong in the management of cold feet.

By this time, some fair reader is mentally inquiring, "What am I to do, doctor? I must not put my feet to the fire, nor into warm water, and I cannot go to sleep with cold feet." Now, you will laugh when I tell you; but if you will try it, you will in less than ten days bless me for the suggestion. It is simply this: Have some kind friend, for about twenty minutes or half an hour, every evening, hold your feet in his or her hands as represented in the cut on page 310.

The shoes must remain on, and morocco, or other leather, is better than cloth. Place the feet in the lap of your friend, and have him or her place the hands over them, so that the palms will rest upon the toes and instep, while the thumbs and fingers grasp the soles of the shoes with sufficient firmness to exclude the air from between the hands and the parts of the shoes covered by the hands. In this way preserve the grasp immovably, with a gentle, but not pinching pressure, until the feet become warm, which will not require many minutes. This method is invaluable because it imparts magnetic warmth, which acts as a tonic to the arteries and capillaries; it diverts the nervous circulation to the extremities by that inevitable interchange of animal mag-



netism which always takes place between two persons when they are in contact ; it gives to the feet more permanent warmth than artificial heat, each warming improving the condition of the patient instead of making it worse ; and it often vitalizes one who is deficient in nervous vitality, and thereby improves the general health. The foregoing reasons will suffice, yet still more could be given.

When some other person is available, the husband should not employ the wife, nor the wife the husband, to do this feet-warming, because they are so frequently in contact that there is less difference in their magnetisms than there is between those less familiar, and con-

FIG. 22.



WARMING THE FEET MAGNETICALLY, AND STIMULATING ARTERIAL AND CAPILLARY ACTIVITY.

sequently a less active interchange of magnetic forces during the process. One of the opposite sex is always preferable to one of the same sex, because there is a greater difference between the magnetisms of male and female than usually exists between two of the same sex.

There is still another way of warming the feet, by electricity, which may be pursued by those who have no friends to take sufficient interest in them to admit of their adopting the first method proposed. It is to put on thin-soled slippers, and scuff the feet, without raising them, repeatedly over a woollen carpet, in a room comfortably warm, and to continue the exercise until the feet become burning hot. This should be repeated as often as once or twice a day, and oftener, if convenient, until a good circulation is established. This process will not

accomplish the object as speedily, nor will it so greatly benefit the general health, as the plan previously advised ; but it is incomparably better in every respect than fire warmth, or the immersion of the feet in hot water.

Warming them by the sun is to be commended. When the wife sits down to her sewing or the husband to read his newspaper, a window should be sought where a full stream of sunlight falls in. The feet, clothed as if for walking, should be so placed as to allow the sunshine to fall upon them, and even up to the knees. You cannot know until you try it, how delightful and beneficial this practice is if you suffer habitually from cold feet.

I will add one more suggestion on feet-warming. Those who have plenty of vitality and are nevertheless affected with cold feet, can generally restore active circulation in the extremities by springing out of bed every morning, dashing the feet into cold water for a moment, wiping them dry, returning to bed and remaining there with plenty of covering upon the feet until they become warm. In conclusion, I will say, that I have not patented any of the proposed plans, and consequently there is no expense in making the experiment. Perhaps the cheapness of the treatment is its only objection, as people are apt to undervalue that which costs nothing.

#### Other Suggestions

For the prevention of disease may be found in various parts of this volume, and especially in the chapter immediately preceding, to which this is simply a correlative. It would be supererogatory to make this chapter as complete as the subject would require if the one on the "Causes of Nervous and Blood Derangements" were omitted. Then, again, in matter coming after this, on chronic maladies, marriage, etc., hints on the prevention of disease will naturally find expression where infirmities growing out of physical or social discord are treated upon.

In taking leave of this chapter, therefore, with its seeming incompleteness, the author takes consolation in the belief that the reader will find somewhere in the pages of this volume, the information which may possibly be sought and not found in the essays herein presented.

## CHAPTER IV.

### COMMON-SENSE REMEDIES.



HAVING glanced at the proximate and many of the remote causes of disease, and made some suggestions for their prevention, next in order is a consideration of appropriate remedies. In pointing out and commenting on these, I expect to encounter the criticism of old-school physicians, and some opposition from the new.

I am often asked the question : "To what school of medicine do you belong ?" What does it matter ? I have been a diligent pupil of all the old masters, and have investigated all systems. I am now a devoted pupil of Nature ; intuition is my counsellor ; common-sense my pharmacopœia. In other words, I am *independent*—bound by the tenets of no narrow medical association, and consequently prejudiced against no new discovery which can be made subservient to suffering humanity. Whatever I find in earth, air, water, and science, useful as remedial agents, I appropriate, and resort thereto, when occasion demands, without fear of being confronted by a conservative brother who sees merit in nothing which has not the sanction of antiquity.

I have wasted much time in the exploration of what is inappropriately termed medical science, but have always found instruction and entertainment in the great book of Nature. The literary productions of old-school writers are often interesting and contain much sophistry ; Nature is refreshing and pregnant with truth.

Hippocrates flourished over eighteen hundred years before the modern science (?) of medicine was founded. He was even unacquainted with the circulation of the blood ; yet he was styled the "father of medicine," and his success in curing disease so excited the superstition of the ancients, that many of them believed he stayed the plague of Athens. Some are born physicians. Hippocrates was. Every man possesses a special talent for something, and he who becomes a doctor when Nature designed him for a reaper, will mow down human beings when he should be cutting wheat.

Redfield, the physiognomist, says that he can tell who are natural physicians by the bones in the face. He describes them as men having an elevation of the arch of the cheek-bone, called the zygomatic arch. He says that one possessing this peculiarity, other things being equal, "is not only inclined to study and practice, but will have a certain instinct for it, which will materially assist his scientific knowledge." "Without this faculty, and its sign, in a superior degree," continues that popular physiognomist, "no person ever attained to skill and eminence in the medical profession, or even made a good nurse." With regard to my natural qualifications, my interested readers will pardon me for saying that, besides possessing the sign Redfield describes, my medical proclivities manifested themselves at an early age. My parents often reverted to my boyhood, when pill-making, etc., entered conspicuously into the diversions in which I indulged, and facetious neighbors after seeing the contents of my juvenile waistcoat dubbed me with the title of "Doctor."

With these remarks, prefatory and egotistic, I will enter upon the legitimate mission of this chapter, which is to advocate the merits of those classes of remedies which have rendered my practice so eminently successful and popular, and to expose some of the most prevalent medical errors of the day.

#### Vegetable Medicines.

The trees, shrubs, flowers, and plants, I contend, possess, in a refined form, all the medicinal properties of the mineral kingdom. Their numerous and far-reaching roots span rocks, ramify in various strata of soil, and extract from good old mother earth her hidden medicinal treasures, which are transposed to regions of air, light, and heat, where chemical changes are effected which at once deprive them of their grosser characteristics, and render them far more efficacious and harmless, as antidotes for human infirmities, than they can possibly be made in the laboratory of the most skilful chemist.

It is said that "if a bone be buried just beyond and a little at one side of a root, the latter will turn out of its direct course and go in pursuit of the bone, and when it finds it, it will stop and send out numerous little fibres which, forming a net-work, will envelop the bone; and when all the nourishment has been sucked out of it, the root will again pass on its way, and the temporary fibres thrown out around the bone will gradually disappear."

Thus the inflexible relic of a decomposed carcass may be transformed into a beautiful flower! What human chemist can do this? And yet it is trifling, compared with what nature is daily producing in her boundless laboratory. The roots of herbage and trees have the same power to extract the useful properties of minerals, and, in a

measure, derive their nourishment from the various ingredients of the soil. An intelligent writer tells us, that "One of the most remarkable properties of plants is the power with which they are endowed of selecting their food. The soil contains various kinds of aliment for vegetation, and the little fibrous roots that fill the ground select from the whole, and suck in, through their minute openings, just the kind suited to the nature of the plant or tree to which they belong. All plants will not thrive on the same soil any more than all animals will live on the same kind of food. Grass and grain require a soil that

FIG. 100.



A SPECIMEN OF WHAT CHEMIST NATURE PRODUCES IN HER LABORATORY.

contains an abundance of silica or flint." The soil of Herefordshire, England, is so genial to the oak, that the trees bearing this name are called, in that region, "The weeds of Herefordshire."

It is this power of selecting nutriment which renders plants so various in their medicinal properties. When we reflect that the earth is covered with an endless variety of vegetable products, no two of which possess precisely the same properties, how absurd appears the conduct of those who wander from the vegetable to the mineral world, in search of remedial agents. Even that greatly prized mineral, iron, which enters so extensively into the *materia medica* of modern practitioners, is possessed by vegetables, and may be administered without

recourting directly to the mineral kingdom for a supply. A writer, remarking upon the influence of iron on vegetables, says: "A curious discovery has recently been made on the chalky shores of France and England. Where there is an absence of iron, vegetation has a seared and blanched appearance. This is entirely removed, it appears, by the application of a solution of sulphate of iron. Haricot beans watered with this substance, acquired an additional weight of sixty per cent.; mulberries, peaches, pears, vines, and wheat derive advantages from



the same treatment. In the cultivation of clover, wonderful advantages have been gained by the application of the sulphate of iron on soils in which that ingredient is wanting, and in cases where it is desired to produce an early crop." Some herbs produce the properties of iron to such an extent that they are easily detected in them, and these herbs, growing on soil where iron ore is found in great abundance, contain it sufficiently to answer all the medicinal purposes of the mineral, and in a form much more suited to the needs of the animal organism than that worked up in the laboratory of the chemist. Many other minerals are found in plants. We are told by Italia Termale, as quoted by the *Révue Scientifique*, and translated by the *Literary Digest*, that "lithium accumulates in the leaves of the grape-vine, in tobacco, and in the grape itself. Another alkaline metal, which accompanies lithium in almost all minerals, but in smaller quantity, is found in the ashes of a large number of varieties of tobacco, in coffee, and in tea; and it is very abundant in the beet, whose ashes form the most advantageous source of the metal. Although the presence of aluminum in the ashes of vegetables is doubtful, that of the oxides of iron and manganese is evident. It is rare that we burn wood, leaves, or nuts without seeing in the ashes a reddish tinge due to iron oxide, and a greenish hue caused by manganate of potash. Zinc exists in the ashes of several plants, notably in the *viola calaminaria*, whose presence in fields often serves as an indication whereby deposits of this metal may be found. Bromine, iodine, and chlorine, which are metalloids, are found in composition with the alkaline metals, especially in marine plants. Even to this day, iodine, used so freely in medicine and the arts, is extracted from seaweed, where it occurs in small quantities. Meyer, of Copenhagen, was the first to assert that the grains of wheat and oats contain copper as a constituent element. Copper, in fact, does exist in these cereals, especially in their hulls. As even the finest bread is not free from bran, it is evident that we consume copper. It should be noted that copper may play a considerable part in making bread, a proportion of one-thirtieth of one per cent. of sulphate of copper being sufficient to raise a moist flour." The vegetable kingdom practically steps in between man and the mineral world, and says: "Do not, O man, eat dirt or the crude indigestible substances that are found therein. I will send my roots deep into the earth, seek out the medicines buried beneath its surface, filter them through my fibres, expose them to the magnetic rays of the ripening sun, and then hand them over to you, deprived of the dregs that would otherwise obstruct the wonderful machinery whereby you move and exist."

I have already alluded to the instinct of plants in searching out bones, and taking from them the mineral properties they possess. A curious illustration of this is found in the fact, that when the grave of

Roger Williams was opened in Providence, many years ago, it was discovered that the roots of an apple-tree had struck into the skull, and following the course of the spine, had branched at the legs, and turned up at the feet ! Besides this instinct to search out sustenance, there is evidence that vegetation possesses sensorial power to some degree. There are plants which, when you touch their leaves in the most gentle manner, fall to the ground as if wilted and dead, and then in a few moments after recover their usual appearance. There are flowers which only open when the rays of the morning sun reach out from the east and touch their folded leaves ; there are others which are so sensitive to sunlight, they remain closed during its presence, and only display their beauties and fragrance to the stars. The sensorial life of a plant is probably not unlike that of man when in that condition of repose which renders him unconscious intellectually of what is passing about him, and yet fully appreciative of existence and the luxury of rest. All of you have experienced this sleep in your morning naps. The bite of a fly, or the slight prick of a pin causes the flesh to recoil, or the muscular fibre to quiver when you are in this condition. And if you will take pains to observe, you will discover that the breaking of a leaf, or the plucking of a flower, produces to a perceptible degree some such motion in the ordinary plant or tree, while there are specimens of vegetable life which seem absolutely to suffer pain when their foliage is rudely disturbed. It is pleasant, therefore, to believe that that very restful semi-unconsciousness which still allows an appreciation of existence, such as we have in conscious sleep, constitutes the sensorial life of the vegetable world, and confers upon it at least passive enjoyment. And when we find the vegetable world so near us, so in sympathy, if you please, with our existence, so instinctive in seeking and digesting the useful minerals of the soil, so assimilating when taken into our bodies, what folly to excavate the earth or the coal-fields for medicine !

Gross minds beget gross ideas—demand gross food and gross remedies. They naturally turn from the study of the green trees and beautiful flowers, with which the brown earth is adorned, and whose luxuriant branches point upward to heaven and health.

#### MEDICINE IN YE OLDEN TIME.

When I was a boy, the old-school doctors in the region where I lived were practically "routinists." They had only about a dozen remedies or less, the leading one of which was calomel or some other preparation of mercury. These they gave to everybody for everything. Not that they emptied them all indiscriminately into the stomach of one unfortunate patient at one time. As a matter of course they selected the one or two or three which they considered best adapted to



the symptoms in the case as immediately presented. These medicines, together with bleeding, blistering, salivating, vomiting, purging, and cupping, constituted their stock in trade. Their main competitors were botanical practitioners, who were contemptuously dubbed quacks; but they had the greater success. There was one in the town where I lived. He was a tall, lank, raw-boned man without school-book education, or

FIG. 101.



THE BOTANIC DOCTOR OF YE OLDEN TIME.

any of the polished manners of a professional gentleman. He was so plain, indeed, in his apparel that a pair of grimy trousers tucked into the tops of cowhide boots and a cotton blouse or shirt covering his arms and shoulders, overlapped with shoulder-straps, usually constituted his outfit in clothing. But he had the keen instinct of the lower animals in selecting the remedies for physical ills. He gathered in the marshes, woodlands, fields, and pastures, the remedies he used, and he might often be seen in the summer and autumn wending his lounging way home with a bag over his shoulders heavily freighted with "roots and

herbs." His success in treating the sick was phenomenal. When the "regulars" failed, he was usually called in, and almost always the "hopeless case" was saved. The preceding illustration does not pretend to give a picture of the man, but rather the style of man. Of course there were botanical practitioners in those days, of education, good clothes, and agreeable manners, but they were mainly found in villages or cities of some size. They were by no means numerous. Not one for each county. Their success was proverbial.

To go farther back than my boyhood, the entire practice of medicine was widely different from what it is now. Dr. Rufus W. Griswold, in 1892, read before the Connecticut Medical Society a paper entitled "Somewhat About the Therapeutics of One Hundred Years Ago," in which he said: "It is remembered that 100 years ago drug-shops properly were not numerous in the commonwealth. Compared with the present time, in ratio to the population, they were scarce. About all the practitioners of the time kept, compounded, put up, and dispensed their own medicines. In endeavoring to get at the articles used, we are first to consider that under the system of education then almost exclusively in vogue, the medical man had gathered less from books than from oral teaching. Tradition, precept, and example, had given him more in the way of instruction than the printed page. Not much original matter in medical literature had gone into type in America, and but a very moderate amount had been reprinted from British and German writers. As to most of the men in practice, their libraries were too small. The way had been mostly that the student rode and saw some practice with his teacher, and from him absorbed the greater part of what he had to start with by himself."

The status of medicine in my native State, Ohio, during my boyhood, was but little different from that which Dr. Griswold has so well depicted as having existed 100 years ago, and as remarked before, the botanical practitioners were renowned for their success. And indeed, that may be said at the present moment. Pharmaceutical chemistry has made such progress that the medicinal herbs and roots which used to be taken in teas and decoctions and in draughts of a tablespoonful or a teacupful, are now neatly administered in drachms or drops, and crude pulverized roots which were given by the teaspoonful, are divested of their inert and useless fibre so that they may be taken by a patient in minute pills or tablets. If one of the "root and herb doctors" of half a century ago were to take a look into my laboratory of to-day, with all its facilities for extracting the very soul of a medicinal plant, he would rub his eyes with astonishment. He would find too, that while in his time he was limited to less than 100 different remedies, the botanical practitioner of to-day has more than twice that number. And still, we have not found all the medicinal treasures of the vegetable world.

Henry Ward Beecher truly remarked in one of his sermons, that "there are medicinal roots in every field which have never been discovered. Many and many a man has been buried within a yard of plants, that, if their healing properties had been known, would have saved his life." There is opportunity for still further progress in the botanical system of practice.

Botanic physicians deserve censure for not being more particular in obtaining *good* herbs and roots. They have often earned an unfavorable reputation by their remissness, when fame would have otherwise been their reward. Gathered in the wrong season of the year they are worthless. Two-thirds of those sold in botanic stores are, on this account, but little better than chips. Then, too, medicinal plants should always be raised and gathered on their native soil. Fishbough very correctly says, that "The vegetation indigenous to any particular clime or locality always bears a relation to the temperature, soil, and moisture prevalent in that locality. The mountains of tropical regions, which rise from a realm of perpetual summer to an altitude of eternal snow, are clothed at their different elevations by different genera and species of plants, adapted to all the gradations of temperature, from the tropic to the arctic. An artificial transplantation of any of these vegetable forms is either fatal to the latter, or else causes in it a gradual change of constitution until it is fully adapted to its new condition." This change in constitution is a virtual change in medicinal properties. Those who cultivate, either by transplantation, or sowing seed, any medicinal plant, in a soil not natural to it, fail to obtain the plant with its full and native properties. Consequently, all who raise in a garden, herbs, etc., of every variety, for the market, contribute in a degree to the ill-success of those physicians who purchase them. During the first two years of my practice I collected with my own hands nearly all the medicinal plants used in my laboratory—not only gathered, but bagged them, and carried them to a convenient place to extract, by various processes, the valuable health-giving medicinal properties hidden in their fibres. What they yielded was as precious as gold, and laid the foundation for a practice so large and so exacting of time and energy, that no more of that delightful botanizing has been possible for me. Whatever may be discovered in the way of curative agencies nothing can wholly take the place of the modest little plants that hide away in the fields and woodlands, or the hardy shrubs or stalwart trees that stand like sentinels to guard them from unfriendly elements, the former pregnant with properties adapted to the upbuilding of diseased tissue, and the latter endowed with strength which can be transmitted to enfeebled nerve or muscle. Hygienists take them when ill. There are thousands of intelligent men and women who do not believe in what is usually termed drug treatment, but who are not averse to

If there is any school that the foregoing does not hit hard, it is the *Ecclesiæ*, but the fathers of this practice were mostly the ablest pioneers in the botanical system. Dr. Griswold, who is an old-school physician, in the paper from which a quotation has already been made, remarked that in the earlier days of the settlement of America, drugs were largely botanical, and were used in a crude state, or in the form of decoctions, powders and tinctures. The study of botany was a part of the study of medicine. "Now says Dr. Griswold, to use his exact language, 'we average to know as little of botany as of the evolution of worlds.' This is not as it should be. And it is because things are as they are, that my practice is not local, but extends into every State and Territory in the United States, and, indeed, every country in Europe, Asia, and Africa, where the English and German languages are spoken. It is because of this that my dispensary has become a world's dispensary, and that invalids suffering from every variety of human ills in every part of the globe are my hopeful patients; and I have a couple of capable sons who have been professionally working by my side for many years, and who can, with fidelity to the botanical practice as improved by the latest scientific discoveries, follow in my footsteps when I am compelled to retire from the field of active labor.

The proper preparation of vegetable remedies is as important as good cooking in the preparation of food. A careless or inexperienced cook will spoil a batch of bread or serve a dish of dumplings which would be better for dispersing a mob than satisfying a normal appetite, and moreover, they would be as fatal in one case as in the other. So in the formation and preparation of vegetable remedies the cooking (so to speak) must be skilfully done to render them effective. One case in illustration will suffice: A physician of a distant village called at my office and told me his wife had an obstinate affection of the uterus which had baffled his skill, and he wished to place her under my personal care if I would undertake the case. He was told that it could probably be managed quite as successfully by mail and express; but he felt sure that a cure could hardly be effected without some skilful surgical treatment. The lady was therefore brought to the city and placed within a few doors of my office. She remained there three months during which time I saw her only twice, and then without resorting to any local or surgical treatment. The recovery was complete, and the husband, greatly surprised at the result, asked if I would tell him what remedies I had employed. They were at once carefully named; whereupon he replied, with manifest astonishment that he himself had used the same things without success. Presuming that he did so, it was doubtless simply a difference in the cook and the cooking; that was all.

ed, he gathers leaves from the bush called "grease-wood," and forces them tightly into the wound. If the animal had the intelligence (or rather the want of it) to call on an old-school physician, he would probably get a *mercurial plaster*.

Whether or not the animals can communicate their instinctive knowledge of plants to their fellow-creatures, there is probably no naturalist who can tell us. In this particular the aborigines of North America would seem to have had the advantage of the animals, while they appeared to be no less instinctive. It was therefore not strange that the Indians who could communicate with each other had developed a *materia medica* peculiarly their own, not perhaps unmixed with superstitious ideas, and with many fetish notions which the civilized mind would naturally eliminate, saving much of value that could be utilized by an intelligent brain. Their valuable discoveries were quickly seized upon by the early colonial practitioners, and it is questionable whether the successes of to-day in medicine are very much greater than they were at that time. Certainly the introduction of mercurial and other mineral preparations did not add anything of value. Quite otherwise when they were allowed to supersede such remedies as were adopted from the Indian medicine men.

#### REVOLUTION IN THE PRACTICE OF MEDICINE.

As already intimated, half a century ago the doctors were "routinists," and depended upon a certain round of limited "heroic medicines." The Eclectics and Homeopaths as well as the original Botanics have made a wonderful change in this respect. They have indeed revolutionized the practice of medicine in this country. Nevertheless, the criticism made by a smart newspaper writer many years ago concerning medical education as imparted in our colleges, still holds true. Our system of medication he says, "imparts a knowledge of *books*, and the *precedents* established by certain ancient practitioners: it explores the narrow channel of usage and custom, deferring to names and opinions, but neglects the study of the *natural* remedies by which we are surrounded. In the commonest of our fields, springing unnoticed by the brook-side, and among the pastures, or growing neglected along stone walls, are hundreds of plants possessing valuable medicinal properties, but of which, *not one in forty* of our physicians can tell the name, much less the *use*. And yet nothing can be plainer than the fact that Nature has furnished a remedy for every disease, and that nearly every remedy exists in the vegetable kingdom. Why, then, is the study of the plants, the roots, and the herbs of the field, the forest, and the mountain-side neglected in the education of those who are styled doctors? Is the acquisition of Latin terms and a general reliance upon mercury and the knife deemed to be more important or safe?"

matter. Wherein they disagree, is considered of enough importance for the different schools or sects to war upon each other, and the conflict is as warm between them as in the earlier days it was between the old and new schools of practice, or between the average physician and the Christian Scientist. They can, however, each show evidences of success as well as some lamentable failures. The latter result mainly from their blind dependence upon their one mental remedy. Their patients must dabble in no medicine, and they must ignore not only all material remedies, but with some of the prophets of this school they are taught to ignore the commonest rules of hygiene ; or, at least, they must consider them as not at all necessary to prompt recovery. One must not think of what he eats or what he drinks, or what he does. He must never admit that he is ill. However, time and experience will rectify these errors, and there can be no doubt but that in the end the science of medicine will be rendered more complete by the discussion which their, in some instances, preposterous claims awaken. All successful physicians cannot fail to have observed how much easier it is to cure a patient when they themselves feel confident of effecting a cure, and when they are able to create around the patient an environment of confident expectation. When the physician, patient's family and friends, and the patient, him or herself, feel complete confidence that a cure is to be realized, it is as when you are on a yacht with both the wind and tide in your favor. It is, indeed, easy sailing, and unless there are hidden rocks or sandbars there will be a triumphant landing in the haven of health. There are wonderful powers in the human mind, and we have only to educate ourselves in the art of employing them. Mental telepathy, thought transference, and other mental phenomena are to some extent engaging the attention of the scientific world, and if blind prejudice will hide its diminished head, the human race will be benefited by the investigation. This result, too, can be greatly hastened by the various devotees of mental science if they will not make too extravagant claims for it or allow their patients to die without medicine when the latter is the one thing needed to save. Medical men also may hasten the dawn of better things by not holding the advocates of the so-called "fads" up to ridicule, and in some instances pursuing them with the lance of persecution. There should be an open field and a fair opportunity for every one who honestly believes he has a remedy or an idea that can minister to the ills of mankind. The healing art was never more progressive in America than when there was the utmost freedom in medicine. Progress is only possible in freedom. In the ranks of the mental healers and Christian Scientists their one idealism is the stumbling-block.

"Owing to the one ideastic tendency, about all mental healers drift out into pure idealism," says Dr. W. C. Cooper in the *Medical*

*Gleaner.* "It is not a bit difficult to prove that nothing exists but mind. But, if possible, it is more easy to prove that nothing exists but matter. For instance, *only* the idea of matter is thinkable, and this depends upon the fact that thought, itself, is material. Idealism, pushed far enough, rules out existence itself. Mrs. Eddy's transcendentalism with reference to disease is the attempted minification of the general into a particular. At the last, she recognizes the relationability of something to nothing, but denies the actual relationability of nothing to something. And this constitutes the basis of Christian Science!

"It is a fundamental fact," continues Dr. Cooper, "that the mental half of a patient cuts exactly no more, nor less, a figure in disease than does the physical half. You can affect the mind through the body with precisely the same facility as that with which you can affect the body through the mind. A mental shock will kill. A physical shock will kill. More are killed by physical than by mental shocks, because physical shocks are more frequent. We can impress the body with medicines and other physical agencies; we can *equally* impress it by suggestion. The Healing Art draws upon every substance and influence that can affect the animal organism."

Dr. Cooper has stated the matter so cogently and succinctly, hardly a word needs to be added, but it should be understood that while we can "impress the body with medicine," and can equally "impress it by suggestion," the physician meets with cases where both therapeutic agencies are necessary to effect a cure. While we live on this planet we must not neglect to remain firmly rooted in its soil. We must depend mainly upon its material products to maintain life. We must look to Mother Earth as well as to the occult or unknowable for succor when ill. "It comes down to where the priest used to wet the ground every spring with holy water to make sure crops," remarks an able scientific writer. "Coming on one occasion to a very sterile field, he paused and said: 'Holy water will not answer here. It wants manure.' That priest had more practical horse-sense than any cult of mental healers."

FIG. 104.



MRS. EDDY, THE FOUNDER OF CHRISTIAN SCIENCE.



The author of this volume has passed the prime of manhood through a series of severe illnesses, commencing in his childhood with a pulmonary attack which the medical faculty considered incurable. His father, though not a physician, resorting to remedies decidedly earthy, though not mineral, things which the author has utilized with great advantage in similar cases in his practice, restored him to health. Consumption was then considered incurable. The case was clearly one of consumption—tubercular consumption—and was so diagnosed by a council of physicians. In the other illnesses, to which allusion has been made, the products of the fields and woods were his remedies, for Christian or mental science had not yet been announced. Neither its truths nor its absurdities had been formulated. Botanical remedies, aided, of course, by electricity and magnetism, have been almost his entire reliance during over forty years of remarkably successful practice. I have said that until comparatively recently Christian or mental science had not been heard of. Nevertheless, it may be truly affirmed that it had been practised, for, as before remarked, most physicians who have cut much of a figure in this world have been those large-hearted, big-headed, optimistic, and magnetic men who brought sunshine and good cheer, as well as a case of medicines, into the chamber of the sufferer from disease, and who left the patient and the family in a happy and hopeful condition of mind. They have employed mental science without knowing it. In other words, they practised the art of healing better than they knew.

The lesson to be learned from this is that a physician should never take a case of illness under treatment unless he feels at the outset, at least, the greatest confidence in his ability to cure. This confidence is necessary to give him the required condition of mind to inspire his patient with hope; to give his facial expression an assuring appearance; to give his voice the right ring; to give the relatives and friends of the sufferer the cheerfulness which should pervade the entire atmosphere of the invalid; and finally to send out from the mind of the physician those subtle forces which act as an uplifting tonic to one under his care. Call it Christian Science, mental science, mind cure, or what you like. It matters not by what name you indicate it. I may be asked: "What is to be done when no educated physician will accept a case—when those skilled in medicine pronounce it incurable?" I reply, without hesitation, that it would be better for such a case to fall into the hands of a charlatan who really believed the case curable, than in the care of a diplomaed physician who considered it beyond help. If "regulars" and "irregulars" are without hope, the sick man can generally find some one "fool enough" to think he can extend a helping hand, and with such confidence sincerely entertained by even an ignoramus, he may succeed. I should certainly advise the hopeless case to try him,

remembering the old adage that "while there is life there is hope." A charlatan or an ignoramus, if dishonest and insincere, would be of no avail. He must be moved by proper motives, and inspired with an earnest desire to save his patient. In treating a case I would even cater to the superstitions of an invalid.

## HUMOR SUPERSTITIONS.

It is as necessary for a successful physician to accommodate himself to the superstitions, the beliefs, and the religious proclivities of a patient as to the temperament or the complications. If one is ill and believes that thirteen at the table at one time means death to one of the party within a year, I should advise him to go without eating rather than make one of a party of thirteen. If ill, and he should think looking at the moon over the left shoulder bodes evil, I should say, be careful that you do not do it. If in poor health, he should think it wrong to eat meat on Friday, I should advise him to let it alone on that day. Even observe fasts if you cannot bring your mind to believe that you are excused when a generous diet is absolutely necessary to support your wasting tissues. Get such crotchets out of your mind if you can, but while they are there, observe them if you would have mental quietude, for when your mind is laboring under disease, or, in other words, unrest, the physical organs are no less disturbed, and the harmony of the vital processes is set awry. When you get well of bodily disease, it will be in order to throw out all superstitious notions and possess mental as well as physical soundness. Indeed such hallucinations can hardly exist in a healthy brain.

FIG. 105.



VIEWING THE MOON OVER THE RIGHT SHOULDER.

"Heigh! diddle diddle! The cat's in the fiddle!  
The cow jumped over the moon.  
The little dog laughed to see such sport,  
The dish ran away with the spoon."

Some of the more rational minded among the Christian Scientists give about the same advice to those who think medicine indispensable. A very gifted lady, who became a convert to Mrs. Eddy's doctrine, wrote me as follows: "In regard to taking medicine, it would probably prove injurious to discard drugs so long as the mind of the individual induces them, or the immediate environment is almost wholly in their favor. The lesson," she says, "is this: That mind is arbiter and dictator. This simple fact, discovered and retained in consciousness, slowly augments our resources of power, of confidence, and self-help." It would be well if all Christian Scientists were equally sensible, and if they were, there would not be so many fatal endings to their treatment of the sick. A almost-pure Christian Scientist may ask. "Why not be consistent, Doctor, and make allowance for the alleged superstition of the Christian Scientist who fully believes that medicine is unnecessary?" To which I reply, that medicine should not be forced upon any adult. If I could not convince an invalid of mature years that medicine was the very thing needed for his restoration I would certainly say that neither the entreaties of friends, nor the mandate of the law should compel him to swallow a dose of medicine against his will. Now, am I not consistent?

While writing this, I remember at least one case which might require an exception to be made to the above rule. A devoted wife came into my office with a thoroughly discouraged and hopeless husband, who objected to taking medicine. He had an aggravating bronchitis, which was developing into consumption. He was a lawyer and he could not plead a case without such interruptions by paroxysms of coughing that he had decided to retire from practice. After a prolonged interview, in which his scepticism in regard to medicine could not be in the least modified, his wife finally remarked that if I would make up a course of medicine she would see that he took it, but he added, "If anything in your treatment, Doctor, depends on faith, it can do no possible good." I prepared the medicine, she followed him about the house with a spoon till he began to see benefit, and by and by hope returned and he recovered. This is one case of good results following unwilling medication.

Returning to the subject of Christian Science, even if, as Mrs. Eddy contends, "mind is all in all," and "Divine mind and its ideas are the only realities," it will take nearly or quite another century for the masses of the people to comprehend and fully accept the proposition, and in this interim there must be resort to material remedies for the amelioration and cure of human ills. Meanwhile it would be well for the medical profession to employ psychic medicine as an aid in restoring the sick. It has its merits if not relied upon as a "one cure all." It would also bring the Christian and mental scientist quite within the

atmosphere of our planet if they would concede the value of material remedies. They would require no such string as is attached to a toy balloon to hold them down.

### Therapeutic Electricity.

It is generally conceded by the medical profession and the public at large to-day that electricity may be advantageously employed in the treatment of disease. In the earlier years of my practice, the medical fraternity in this country called those who claimed to do wonderful things with this mysterious agent, "quacks." To-day there is hardly an educated member of the profession who will deny its virtue if intelligently employed. In 1857-58, when I issued my "Medical Common Sense," seven or eight pages were taken to prove it might be advantageously used in a variety of physical derangements. In the Old World its value was recognized by Faraday, Golding Bird, Donovan, Le Roy d'Etoile, Cross, Palaprat Smee, Matteucci, and other medical writers, and it was also employed in many hospitals in Europe. But our smart

set of the profession would have none of it. Besides myself I knew of less than a half dozen practitioners (and they were not considered "regulars") who used it in the treatment of disease. All honor to their names. They were Drs. Dodd, Benton, Smith, and LeRoy Sunderland. Probably I am the only living pioneer at this time in this country who was early in the field of electrical therapeutics. Has great

FIG. 106.



ELECTRICAL RADIATION FROM THE HAND.

As pictured in the *New York Journal*.

progress been made in this department of medical science? Not that I can discover. So far as results are concerned, the physicians who used it in those early days were able to report quite as wonderful cures through its agency as are observed to-day. This is called the "electrical era." And so manifestly it is, for we use electricity for almost everything, and the discoveries of the past fifty years have been phenomenal. We send messages with it beneath the ocean to distant continents, and thousands of miles away by land in a few seconds; we hold conversation with friends at a great distance through its agency, and can even recognize the voice; when old Sol is absent, cities and villages are illuminated with its silvery light; passenger-cars are speedily moved by its irresistible force; and there is a fair prospect that in the near future we shall be flying through space like the birds in the air by its guiding and propelling power. But as a medical help in the cure of disease, other agencies have not only caught up with it, but to-day, with the improvements in the preparation of vegetable remedies, it is far less necessary than formerly in the treatment of human ills. Nevertheless, it has its value, and this chapter would not be complete if it were omitted.

If my theory, as given in the first chapter, is correct, regarding the important part which electricity performs in the animal economy, it does not require facts or arguments to prove the value of electricity as an auxiliary agent in the treatment of disease. The fact is rendered self-evident. It will be remembered that I assume and give facts to prove that the same agent (electricity) which is employed to move and regulate the sublime planetary world, is used by the mind of man to move the feet, arms, limbs, and perform the various functions of the animal mechanism, and that all the vital processes depend upon it. This theory was, so far as I know, first clearly set forth in "Medical Common Sense," my first cloth-bound publication, which had not less than a million readers between 1858 and 1869, and which, at the last-named date, was merged into this volume. The same theory is the all-pervading idea in this work. Science, in its steady and majestic march, is giving the most convincing evidence that this idea is not elusive, but based upon the very laws of our being. Recent discoveries by means of photography tend to prove that every human body is surrounded with a halo of electrical radiation, and Professor A. D. Waller, M.D., F.R.S., of London, has been reported by the press as saying that he has been able "to show by laboratory experiments that the human heart has an electro-motive force, and that electricity may be considered the cause of its beating." He has also traced the electric currents that are sent through the various parts of the body. In addition to muscular electricity he can proceed a step farther and show that an electrical effect accompanies a natural discharge of nerve-impulse. He has found that



the galvanometer is a good indicator of physiological changes. To watch the alterations of physiological activity taking place in fatigue or under exercise or other influences, the electrical effect is an exact measure of the action in the muscles."

The New York *Morning Journal* of November 27, 1898, reported Professor Adrian Majewski, a famous Parisian scientist, as saying:

"It seems almost incredible that the human hand has such strong electrical qualities that it gives out an electric light like an incandescent lamp, but that is what is shown by the photographic plate. The pictures which I have obtained have been made by the simple process of placing my hand over a sensitive plate in a dark room. After fifteen or twenty minutes of contact the image which appeared on the plate was almost as distinct as if my hand had been photographed by sunlight.

"Whether all persons hands give out sufficient electrical rays to make a photographic impression I am unable to state. It is possible that only people with strong magnetic qualities can produce this effect.

"I have long been aware that my hands gave out a strong magnetic influence. It was this which prompted me to see whether this electricity would make any impression on a photographic plate. To my surprise I found they did. I also found that these luminous jets or currents which radiate from the hand flow freely between hands of persons in sympathy with one another. But in the cases of persons not in sympathy the electrical currents as shown on a photographic plate are turned back and flow in opposite directions,"

FIG. 107.



THE REPELLENT ELECTRIC WAVES OF THE HAND.

Reichenbach tells us that the "sensitive man" put in a dark room where there is a cat or bird or a butterfly, will observe flowing from their bodies what he calls a "luminous effluvia." He even claims that flowers will exhibit a kind of surrounding light which in a room however dark, will enable a "sensitive" to determine what flower it is. He speaks of light radiating from the hands, and indeed from the whole body. What he calls "luminous effluvia" I have named electrical radiation. This I did before knowing of his experiments or of his discoveries.

Thus science is gradually proving all that I claimed in my early publications in regard to the part that electricity plays in the vital processes and movements of the human body. It is said that "a professor of the British Royal Institution took up a vial of cow's blood, into which he put two wires connected with an electrical bell. He then added some oxygen to the blood, and behold, the bell began to ring!" What does that suggest when we consider how the blood enters the lungs for its aëration, and that the oxygen which is inspired comes in contact with the blood in the lungs?

#### ARE NOT NERVE-FORCE AND ELECTRICITY THE SAME?

The only plausible objection to the theory that electricity and nerve-force are closely related if not identical is given by Dr. Ure, who says that *electricity* will pass through nerves which are almost severed and divided, and produce contractions in the muscles over which they are distributed, while the *nervous forces* will cease to pass through and perform any muscular motion when the nerves are thus lacerated.

To one who has failed to discover the almost omnipotent power and instinctive wisdom of the mind, this objection would appear decisive. But my reply is, that *animal electricity is controlled by the mind to which it belongs, while chemical or other electricity is controlled by the will of the operator who employs it.* In other words, animal electricity is governed in its distribution through the system by the intelligent mind whose seat is in the brain, and who *voluntarily withdraws it from any nerve which may be disabled, lest the severed or divided nerves be entirely destroyed by the continued performance of its legitimate function while in this sorely lacerated condition.* The mind constitutes what is called the *vis medicatrix naturæ*, or healing power in any animate body, by which, when diseased, the system is assisted to recover. It is the "family doctor" of the organs over which it presides. Consequently, notwithstanding the mind has not the power to resist electricity artificially applied to any disabled nerve, by an operator, it can and *does* control its *own* electricity, and will not allow it to traverse a wounded nerve. Nor can this peculiar power of the mind be overcome by the *will* in such a case, any more than the will can arrest the action of the



involuntary organs ; who can stop the pulsations of the heart by an effort of the will ?

The perfect control which the mind has over its own electrical agent is again exhibited when business or family troubles or bereavements overtake an individual. The brain, stimulated to painful activity, consumes more than its due proportion of the nervo-electric fluid, and the mind withdraws enough from the stomach and vital organs to supply the demands of its most important dependent. In consequence of this physiological "panic," the heart, liver, stomach, etc. (corresponding to the merchants), fail, and the brain (bank) takes care of itself. In diseases induced by mental depression, we therefore find electricity valuable as an assistant, although, in consequence of the blood derangements entailed thereby, insufficient unless supported by nutritive and purifying vegetable remedies.

It is the interruption or partial withdrawal of the nervo-electric circulation, which causes what we term "nervous diseases ;" and there are more affections of this character than were ever dreamed of in the allopathic philosophy. There is often an inharmonious action of the nervous forces in lung, liver, heart, and kidney diseases. All these organs perform their appropriate offices under the stimulus of electricity. For instance—the lungs are not expanded and contracted by the inhalation and exhalation of air, but the diaphragm is thrown downward, and the air-vesicles opened by the nervo-electric forces acting on the muscles controlling the former, and on the little muscular fibres and tissues composing the latter. By this electric movement, air of necessity rushes in to fill the vacuum ; when the same forces contract them, exhalation necessarily follows. In diseased lungs and shortness of breath, there is frequently an interruption of the nervo-electric circulation, and hence the value of electrical remedies of some sort, in addition to internal medical treatment, in the cure of many cases of pulmonary disease.

When it was discovered that the nerves were composed of separate nerve-cells, and were not like a continuous thread or string or telegraphic wire without intermittent space, it looked as if the theory were put in question, but it should be understood that the nerve-cells, though separate and distinct bodies, have minute tentacles or feelers which reach out to each other and afford the necessary connections for continuous current of nerve-force. Even if this were not the case, it would appear from what follows that nerve or electric force could traverse them just as electricity can traverse discontinuous metallic conductors. The *Literary Digest* of June 25, 1898, contained an article headed "Similarity of Electricity and The Nervous Current," translated from *La Nature*, which I will copy entire, for although a little technical in its language, it will be discovered by the average reader that it strongly

supports the theory I have so long held in regard to the part electricity plays in the functions of the human body. The article is from the pen of Dr. E. Branly, an eminent French electrician, and is as follows :

"Progress made in one branch of science often throws light on obscure points in entirely different branches. Thus it is that the so-called radiocoductors or electricity seem likely to aid us in understanding the phenomena of nervous currents.

"Nerve-currents have long been compared to the electric currents that circulate in metallic wires. This analogy became inadmissible after the discovery that the nerve-elements are anatomically discontinuous ; but it has been re-established by the knowledge of the method of propagation of electricity in discontinuous conductors.

"Radiocoductors are discontinuous substances consisting of metallic particles in an insulating medium, the quantity of insulating material being very small. They are insulators under ordinary circumstances, but become conductors under various electric influences, as when a spark is caused to pass in their neighborhood, even at a considerable distance, or when a condenser or transformer discharge, or a current from a battery of numerous cells is passed directly through them. This conductivity often persists a very long time. Certain physical circumstances, such as a rise of temperature, and particularly a sudden shock, hasten the return of the insulating state. When conductivity has once been established and the return to a state of resistance has taken place, an action weaker than at first is sufficient to re-establish conductivity.

"There is no sharp distinction between continuous and discontinuous conductors; the discontinuous conductor of separate particles in an insulating medium is the type of all conductors. In a metallic block, compression has greatly reduced the insulating medium that surrounds each grain. In substances that are visibly discontinuous, insulating matter keeps the conducting particles clearly separate, and when the insulator is in a sufficient proportion, the increase of conductivity, instead of lasting some time, disappears immediately after being caused, while with a yet greater quantity of insulators finite conductivity no longer appears, even with the direct application of violent discharges.

"The nervous system is made up of 'neurons,' or independent elements, not fastened together, and connected only by their branched extremities, and by contiguity, not continuity. The nerve-current is stopped when this contiguity ceases. Its passage occurs again whenever the force of the current is increased or whenever the contiguity of the extremities of the neurons becomes more perfect. Is this discontinuity at the extremities the only kind, or can the constituent particles of each nervous conductor also offer—at least in pathologic states—a form of discontinuity that makes the passage of the nerve-current still more difficult ?

"Certain nerve-phenomena are analogous to the phenomena of radioconductors. Just as a shock weakens and even stops the conductivity of radioconductors, so a wound may produce anaesthesia and paralysis, due to a suppression of the nerve-current, and consequently to a defect in the contiguity of the nerve-elements.

"On the other hand, just as the oscillations of the electric discharges establish the conductivity of radioconductors, so we see that these discharges act most effectively in the cure of anaesthesia and hysterical paralysis.

"The parallelism between the effects of shock and of electric sparks on radioconductors, and on the nervous system in hysteria, extends also to its susceptibility to feeble action after a powerful action has produced a primary effect.

"Discharges of high frequency are eminently fitted to make radioconductors conductive, and we see also, according to the observations of D'Arsonval and Apostoli, that they exert a curative effect on affections due to retardation of nutrition. If these affections can be attributed to imperfect transmission of the nervous current, we are justified in supposing that the discharges act by re-establishing between the nerve-elements a contiguity that has become insufficient.

"If we compare the propagation of a nerve-wave in the nervous system to the propagation of the electric current in a radioconductor, we may assert that a neuron behaves like a metallic particle. In the case in which the intervals that separate the extremities of two contiguous neurons cannot be crossed, because they are too wide, or because the nerve-current is not strong enough, an electric discharge will re-establish the broken communication, and this communication will remain for some time. The therapeutic rôle of electricity can thus be explained. It would not be substantially altered if it should be found that not only the extremities of the neurons, but the elements of a simple nervous conductor were themselves too far apart to transmit a nerve-wave.

"The facts seem to me to be important enough to form the basis for hypotheses and experiments from which electro-therapeutics cannot fail to receive much benefit."

#### THE THERAPEUTIC VALUE OF ELECTRICITY.

Golding Bird, who devoted much time to the investigation and application of electricity, said: "Conscientiously convinced that the agent in question is a no less energetic than valuable remedy in the treatment of disease, I feel most anxious to press its employment upon the practical physician, and to urge him to have recourse to it as a rational but fallible remedy, and not to regard it as one either expected or capable of effecting impossibilities." The same writer adds, that "elec-



making the application. Each complication which the patient has, must be duly considered in its relation to the others. Constitutional causes must also be duly considered. The proper course for a physician to pursue, who wishes to obtain proficiency as an electrical operator, is to place himself under the *personal* tuition of a competent electrician, and during his pupillage witness all important operations, just as he who wishes to become a good surgeon attends the clinics, and witnesses the dexterity exhibited by his instructor in the use of the knife. An invalid who wishes to employ electricity without submitting to the experienced operator, should obtain, from an intelligent source, special directions for his individual case.

Guided by the directions which are furnished by mechanical electricians, isolated cases do occur wherein remarkably successful results are realized. "Accidents will happen in the best of families;" and, inasmuch as electricity possesses peculiar curative powers, now and then one who knows nothing of the science of electricity; knows nothing of the peculiar structure of the human organism; a mere novice in the art of detecting the nature and extent of a disease, will stumble into success. Many more not only fail to derive benefit, but injure themselves by random experimenting. Fatal results may not be as likely to follow as if the same persons had plied themselves with blue-pills and other allopathic inventions, for the reason that lightning in any form is a safer agent to deal with. It is related of Ben Johnson, a Revolutionary soldier, of Milford, Mass., that he was struck with lightning, and remained insensible for two days, when two doctors were called, who said he would die; but just at that moment his power of speech returned, and he ejaculated: "I have stood cannon, musket-balls, and bayonets, and I can stand thunder and lightning if the doctors will only let me alone." The old man recovered. Now, no one supposes that such an overwhelming dose of mercury would have ever let the veteran soldier speak again. It takes a vast amount of electricity, even in the form of a bolt of lightning, to kill any one. Hence the seeming impunity with which electro-magnetic machines are employed by persons who do not know the negative pole of the instrument from the positive, and who are much less acquainted with the nature of the various currents which may be employed.

#### ELECTRICITY, TO BE EFFECTUAL, MUST BE PROPERLY APPLIED.

The reputation of electricity has suffered by its bungling application in the hands of inexperienced operators. As the effect must depend upon the form and mode of application, it is obvious that no one should apply it without definite instructions, unless he is acquainted with the science of therapeutic electricity and has some knowledge of anatomy and pathology.

I have observed, with regret, the infatuation some men exhibit after witnessing its beneficial effects in one or two cases. Having cured themselves, or perhaps a neighbor with electricity, the conceit at once overcomes them that they are *natural* physicians, and that that agent alone is capable of healing every ill that flesh is heir to, while perhaps they are "natural ninnies," tampering with the sublime phenomena of an omnipotent and mysterious element.

Such operators, unschooled in physiology and the science of *materia medica*, have done much mischief with electrical machines, often applying them when there was no occasion, and with a power too intense for even a person in health to endure. Some parts of the human system are more sensitive than others, and while a powerful current is necessary to affect some organs, a weak and almost imperceptible one is required to have a beneficial effect on others. But the most contemptible men are those who, taking advantage of the reputation electricity enjoys, set up regular "Peter Funk" establishments, from which they advertise to cure every disease that flesh is heir to by an operation or two. While skilful electricians are, by their good works, imparting faith in the therapeutic power of electricity, these despicable charlatans are imposing on the confidence thus created, by humbugging unfortunate invalids who happen to fall into their meshes. Among the later developments of electrical humbuggery are a large variety of appliances in the form of belts, pads, corsets, hair-brushes, and garments. All are "loaded" with metal parts, but very few will show by a galvanometer test the power to develop any electrical current or effect, and those which can by such test be shown to be honest are cumbersome and disagreeable nuisances for daily wear, and invariably cost as much or more than a first-class electro-medical battery. Every good thing has its counterfeit, but it would seem that electricity has had rather more than its share of such debasement.

Cleveland, in treating on galvanism as a remedial agent, very sensibly remarks: "In making use of galvanism as a therapeutic agent, it should not be relied on to the exclusion of every other treatment, neither should a cure of the disease for which it is applied, be anticipated in a miraculously short space of time. Disease in any organ produces a change in the condition of the organ diseased, and time must be allowed for the process of absorption and deposition necessary to bring the organ back to its normal condition. Galvanism, when properly applied, will be found of great advantage in hastening these processes; yet it will not do to apply it with such power as to destroy the organ from which we wish to remove the abnormal accumulations, or even to carry the action of that organ beyond the condition of *health*."

In this connection I would say that *shocks* are not only unnecessary but are often injurious in treating diseases. I have never found it

necessary, with the beautiful machine I have had constructed for therapeutic purposes, to administer shocks, except in obstinate cases of paralysis of both nerves of motion and sensation, and in these cases the nerves of sensation are not sufficiently active to allow the patient to suffer any pain or discomfort from them. The most delicate and sensitive females who have submitted to my electrical manipulations, have, from the first operation, considered the influence agreeable rather than otherwise; and many of my patients have continued their use longer than was actually necessary, because the sensations, during the operation, were not only exceedingly agreeable, but the after-effects inspiring and invigorating. As regards making electricity in any form a "one-cure-all," Cleveland is eminently right. I meet with very few diseases that can be cured by electricity, galvanism, or electro-magnetism alone. Nervous affections almost invariably inflict an injury upon the vital organs and blood, which is not removed by the correction of the nervous harmony merely. Here recourse must be had to mild medication. In mercurial diseases, it will not answer to merely cleanse the system of the offending mineral by the electrical process, particularly if the mercury has been many years in the system. It is, of course, of paramount importance to remove this corroding *cause*, but, having done this, effects, which have become diseases in themselves, remain, and must be disposed of. Here, too, mild, nutritious, and blood-toning medicines must be given in connection with electricity.

It is idle prattle to talk of making the lame walk by the use of a single electro-chemical bath. Instances do occur upon which to base such exaggerations, it is true; I have seen many such surprising results attend my own operations. But he who indiscriminately promises such success does positive injury in eight cases out of ten. It is enough to say that a skilfully administered electro-chemical bath will expel mineral poisons. This is a great achievement and opens the avenues of health to thousands who are suffering from the effects of old-school malpractice. After having cleansed the system of the vile poison, it only remains for the skilful physician to remove the injuries the system has sustained by its former presence.

Let not the temperate tone of the preceding paragraph lead any one to suppose that the blusterers, who startle whole communities with the announcement that they are curing everybody and everything with electricity, are any better posted regarding its marvellous curative powers than the writer of this; I doubt if any one's experience in its employment can more than parallel my own. I say this, not in a spirit of boasting, but only in simple justice to myself, while cautioning the afflicted against exaggerated statements put forth by impostors. For the past forty years I have been a faithful student in electrical therapeutics, and have employed the agent in thousands of cases. A



large practice has given me every opportunity to test its effects in all sorts of chronic diseases. The results, in a majority of them, have been truly wonderful, and those who have witnessed my operations have turned away with the settled conviction that all a physician needs for permanent success, in every form of disease, is a well-constructed electro-magnetic machine, and a thorough knowledge of its use. One instance made an indelible impression on my mind. A German physician, who had been through the best European schools, and had had

FIG. 100.



A COMPLETE OFFICE BATTERY.

much experience in various hospitals, ridiculed the claim I set up for therapeutic electricity, and, under the supposition that he would see something to strengthen his prejudices, took pains to witness some of my operations. The results of his investigations were to him perfectly overwhelming, and after giving some applications himself, under my directions, he proposed to procure an electro-magnetic machine, and adopt electropathy as a specialty! I have made both rheumatic and paralytic invalids run and rejoice in the restoration of painful, con-

tracted, stiff, and withered limbs. I have caused the haggard, down-cast, cadaverous face of the dyspeptic to light up under the exhilarating effects of currents of electricity sent down the pneumo-gastric nerves to the stomach. I have imparted an elastic step and glow of health to many a woman who had for years before crept about her domicile under the debilitating effects of female weaknesses. I have given the neuralgic sufferer occasion to rejoice in my discoveries in electrical therapeutics. An interesting young woman, a teacher in a popular New England institution of learning, once called upon me with a neuralgic difficulty. She had suffered a thousand deaths in the period of about ten years. From early girlhood, a rain-cloud had never darkened the horizon without aggravating her torture to such an extent that she often implored her medical attendant to open an artery and let the horrors of such a life ebb away with the arterial fluid. She had tried everything old school and new school had recommended, and her faith in all had vanished. The principal of the institution, however, had called on me and investigated the methods of my practice, and under his solicitation she determined to make one more attempt. After the fifth operation, a long, drizzling spring rain of nearly two weeks' duration set in, but her old tortures did not return. She wisely adopted a course of vegetable medication to render this good work permanent, and a year afterward she wrote that she had been entirely free from neuralgia. I might relate enough wonderful instances of my success in the employment of electricity to fill this volume; I have only given the foregoing instance because of its peculiarity. In the practice of a lifetime, a physician would hardly meet with another such sufferer. To be a first-rate operator, a physician must be a *battery in himself*. In the treatment of many diseases, the current sent out of an instrument must be modified by individual electricity, or, as it is more commonly termed, "animal magnetism." There is great difference in individuals in the possession of this. While some are very positively magnetized, others are, naturally, extremely negative, and cannot impart to another the first particle of this invigorating influence.

Figure 110, on page 342 will serve to illustrate this proposition. We will suppose the dots to represent the animal magnetic currents. The hand held above the head illustrates the magnetic power of a person who is highly electrical; the one above the right shoulder, that of a person considerably so; while the one over the left shoulder fairly illustrates one nearly destitute of animal magnetism, or individual electricity. Not that any one is entirely destitute, but many do not possess a sufficient supply to exert any perceptible influence over another. To be a successful electropath, one must possess the highest amount of positive individual electricity, as represented by the hand above the head in the picture.

Now, while I am well aware of the fallibility of this mode of treating disease, when adopted as a specialty by persons possessing the greatest amount of magnetism, and while I know that cures apparently effected by this power or agency alone are seldom permanent ones, but reliefs of temporary duration, the truth cannot be gainsaid that the possession of this magnetic power is of vital importance to one who desires to be a successful electrical operator. I have found, in giving instructions in therapeutic electricity to physicians, that they differed

FIG. 110.



MAGNETIC HANDS.

greatly in the power of employing it efficiently, even when they seemed to be equally proficient in the theory and practice. In other words, while they perfectly understood the *modus operandi* of making the manipulations, and the currents to be employed, the results of their experiments were widely different. This want of uniformity in their success I have attributed to the difference in the magnetic powers of different individuals, and how wisely, I leave it for the reader to decide, after having perused what I have herein written, and what will be further found in Part Third of this book.

In all disorders involving the nervous system, electricity, applied properly by a good operator, is an excellent substitute for popular anodynes. It has been the general custom of the medical profession to resort to stupefying narcotics to allay nervous irritability, which unquestionably produce temporary relief, but, as certainly, ultimate injury. I may truly say, that I have always found electricity to be eminently a nerve-medicine, yielding timely relief, and no unwelcome reactive results.

However, as before remarked, such wonderful progress has been made in pharmaceutical chemistry during the past quarter of a century, and so many new remedies of the vegetable kingdom added to the *materia medica*, that electricity is not so indispensable to a successful medical practice as it once was. During my professional career I have annually treated, successfully, hundreds of patients laboring under different chronic diseases, whose faces I have never seen. My files contain

letters from every State and Territory in the United States, from nearly every part of Europe, from some portions of Asia and Africa, and also from nearly every province of British and South America ; and I will further say that if I could, without violating confidence, publish their contents, my readers would almost conclude that the days of miracles are not past. Occasionally a case presents itself which absolutely requires the application of the element generated by a mechanical or a chemical apparatus. Such invalids to obtain the required benefit must present themselves in person for the necessary electrical manipulation, unless there are good operators in their immediate neighborhood, or except it be in cases of self-treatment with a home battery under the specific directions that may be provided by a skilful physician.

### Animal Magnetism.

"Animal magnetism is a humbug!" No, reader, *you* believe in it. Your reason, perhaps, is not convinced and you may think you do not. Then, why should I know better than you do what you have faith in? Let me tell you. The other day you came in collision with a chair and bruised your shin. Instinctively you bent over and rubbed the contused limb with your hand. The baby fell from your lap upon the floor; you picked it up hastily and rubbed its little head till it stopped crying. One night you were attacked with cramps in the stomach, and the hand flew there immediately; you pressed and manipulated the region where the suffering was felt until you were relieved. But a few days ago your wife had a headache, and as she reclined on the sofa, you sat beside her and passed your hand gently over her feverish temples. Now all these instinctive, and I may almost say involuntary applications of the hand, in cases of physical distress, show that with all your professed scepticism you, practically, believe in the efficacy of animal magnetism, and it is your experience and mine, and my observation as a medical man, that leads me to place animal magnetism prominently among what are denominated in this chapter Common-Sense Remedies.

Thus, I introduced this curative and mysterious agent in the early editions of this work in 1869. Few in this country had any knowledge of, or faith in, Animal Magnetism at that time. Drs. Doid, Sunderland, Benton and others had lectured upon the subject and, by experiments, exhibited some of the wonderful effects of this peculiar force. The gentleman last named was especially successful in showing what could be done by the power now called "hypnotism." Most of my readers are doubtless somewhat familiar with the strange performances of susceptible subjects while under the influence and control of a good mesmerizer. Well, all these things were done repeatedly by Benton in

various parts of this country between the years 1840 and 1860. The medical profession, however, were sceptical, and laymen shook their heads with incredulity. They were sure there was some deception practised, notwithstanding the fact that those who were put in the mesmeric sleep allowed pins to penetrate their flesh, burning hot irons to be applied to their arms, and teeth to be drawn, without flinching. Under the will of the operator timid young men could be made to personate orators and deliver long speeches before large audiences. Invalids were relieved of various ills by the laying on of hands, etc. Knowing ones exclaimed "Humbug!"—and those who took all ideas second-hand echoed the verdict of their superiors. Now all is changed. Learned professors come before the public with lectures and experiments. "Hypnotism" is popular! They are not disposed to award due honor to Mesmer by calling it Mesmerism. Everything is "Hypnotism." Let us briefly review its history.

#### THE BEGINNING OF MESMERISM.

Dr. Frederick Anthony Mesmer was the first in what is called the Christian world to recognize the wonderful powers of animal magnetism, and employ this agent in the cure of disease. He promulgated his theory in 1778, and was denounced by the medical faculty, as a matter of course. Two commissions were appointed to investigate what was called mesmerism. In one of these commissions our own honored Dr. Benjamin Franklin took part; he who, with the kite and key, coaxed lightning to come out of the clouds and prove to us that it was not a stranger, but the same kind of wonder electricity is. And these two commissions, one having the wisdom of Franklin to guide it, dismissed the doctrine of Mesmer as a delusion! Still the people flocked to Mesmer, and, although he was derided by the medical profession, condemned by scientists, and watched with suspicion by all intelligent communities, his success in healing the sick brought him support, so that poverty was not added to persecution to embitter his useful life. The great naturalist, Joseph Francis Deleuze, the friend of Cuvier and Von Humboldt, visited Paris to gather material to expose the humbug! He returned to proclaim the wonders of mesmerism and to practise it himself! He wrote and published a volume giving accounts of cures as remarkable as those to-day ascribed to Mental Scientists, Christian Scientists, Faith Healers, and others of the occult school. The Marquis de Puységur became a pupil of Mesmer, and discovered in his experiments that some people could be put in an unconscious sleep by the power of animal magnetism, and this condition was called mesmeric sleep. Dr. Braid, of Manchester, following in the wake of the originals, found he could produce the same phenomena, and he was first to call the mesmeric sleep "hypnotism." Had not ethereal anæsthesia

been discovered by Morton and others it is probable that mesmerism or hypnotism would have been more speedily brought to the attention of the public as an anæsthetic in dentistry and surgery. It had been tried with more or less success when Dr. Morton introduced his important discovery. For many years mesmerism was in a profound mesmeric sleep, when it suddenly awoke between 1870 and 1880 with such men as Charcot, Hansen, Weinhold, and others in the Old World, and Drs. R. A. Gunn, Wm. A. Hammond, and others in the New World, surprising large audiences with examples in mesmerism such as Dr. Benton and other pioneers in this field had exhibited long years before, when the "regular" profession would have nothing to do with them. The doctors disagree as to the nature of the phenomena. Dr. Braid did not believe that any magnetic fluid emanated from the operator. The hypnotic state, as he called it, was induced by certain physiological modifications in the nervous system induced by "suggestion." He has his disciples, but the intelligent masses are quite ready to believe that everybody has a magnetic atmosphere of his own, and that everyone possesses magnetic forces which can be made to influence, and in some cases control susceptible persons. I have met with no more rational theory to account for mesmeric phenomena than the one given on page 189 of my work, entitled, "Medical Common-Sense," published in 1858, and reproduced on page 827 of Part Third. Indeed, this theory has been adopted by many writers upon the subject. At least one comparatively recent writer speaks of it as if it were a discovery of his own. Whatever differences exist in the minds of medical men as to just what causes mesmeric phenomena, all now recognize and believe in them, and the employment of mesmerism or hypnotism is recommended in many cases of nervous disease. In the summer of 1880 a convention of scientists in Paris had hypnotism under consideration, and it was resolved that the study and application of this agent should be introduced into the teachings of Medical Science. And thus have the claims of Mesmer and his followers been vindicated.

#### MORE RECENT INVESTIGATIONS.

My theory of mesmeric power is quite essential to support many of my views as given in this work, and hence I was pleased to find, many years ago, that the experiments of Mr. William Crooks, as reported in a work entitled, "Spiritualism Answered by Science," by Edward W. Cox, served to confirm it. Mr. Cox was a member of the London Dialectical Society's Investigating Committee, and was present at the experiments of Mr. Crooks. The object of his pamphlet was to show that the so-called spiritual manifestations were produced by something he called psychic force. He says, "This force is generated in certain persons of peculiar nervous organization in sufficient power to operate

beyond bodily contact," and, he continues, "there can be little doubt that the force is possessed by every human being—that it is a necessary condition of the living nerve, if, indeed, it be not the vital force itself," and that it is possessed by psychics in extraordinary degree. Mr. Crooks, he adds, "has recently constructed an instrument of extreme delicacy, which seems to indicate the existence of the psychic force more or less in every person with whom he has made trial of it. The existence of such a force is asserted by Dr. Richardson, in a recent

FIG. 111.



PUTTING A SENSITIVE SUBJECT TO SLEEP.

article in the *Popular Science Review*, in which he contends that there is a nerve-fluid (or ether), with which the nerves are enveloped, and by whose help it is that the motion of their molecules communicates sensations and transmits the commands of the will. This nerve-ether is, he thinks, no other than the vital force. It extends with all of us somewhat beyond the extremities of the nerve-structure, and even beyond the surface of the body, encompassing us wholly with an envelope of nerve-atmosphere, which varies in its depth and intensity in various persons. This, he contends, will solve many difficult prob-



lems in psychology, and throw a new light on many obscurities in psychology and mental philosophy."

Now, the psychic force referred to by Mr. Cox, and the nerve-ether so called by Dr. Richardson, are manifestly only other names for what Mesmer and his followers called mesmeric force, all of which so-called forces are one and the same as animal magnetism. The same writer speaks of "nerve-ether or nerve-atmosphere," which emanates from every animal body. It may as well be called magnetic atmosphere. So long as we recognize its existence it matters little what name we give to it. When we acknowledge its presence and its power it is not difficult to account for all the seeming miracles performed in the name of Christian Science, Mental Science, Faith Cure, Prayer Cure, and the Bones of St. Anne!

#### HOW ARE THESE ALLEGED CURES EFFECTED?

First stop and think how vitiated and noisome the air becomes by confinement; how impure and full of miasma water is found to be when stagnant. Then think for a moment what may be the pathological condition when nervous force is moving sluggishly and languidly through the human organism. What but disease can result when the nervous forces become thus inactive, and in some cases insufficient in intensity to perform their functions in the system? In this condition whatever can impart more force and set in action the sluggish, nervous circulation; whatever may be brought to bear in the way of superstitious faith or great expectation to produce profound emotion in the sufferer, may quicken nervous circulation, and thus, for the time being at least, change conditions which predispose to disease. In nearly all these cases, however, animal magnetism plays an important part. Those who resort to Christian Science methods are what Cox would call

FIG. 112.



NERVE-ATMOSPHERE,  
According to Dr. Richardson.

ELECTRICAL RADIATION,  
According to Dr. Foote.

Psychics, or what I would call good magnetists. The same may be said of those who practise the Mind Cure, Faith Cure, etc. It is even reported that on days when the devout Catholics visit the bone of St. Anne, priests are in charge of the sacred relic, and there is a relay of priests, so to speak, some retiring when fatigued, and others, fresh and full of animal spirits, coming in to conduct the services while the faithful sufferers are crowding to the front. The book already referred to, written by Deleuze, tells us that "the magnetizer causes a headache or side-ache to cease simply because he *wills* it;" then he says, "There are men endowed with such magnetic power they can act upon patients who are very susceptible, and in perfect communication with them, while directing the action upon this or that part by the thought and by the look." Many stories are told of the late Colonel Ingersoll which are untrue. I will relate one for which I am unwilling to vouch, but which will illustrate a point I desire to make: A minister asked the Colonel what he would have different from what the Almighty had instituted. "I would," replied the Colonel, "have had health catching instead of disease." Well, the real fact is, health *is* catching, and an invalid cannot associate with persons full of health and vitality without receiving benefit. I think Colonel Ingersoll must have recognized this fact. Probably he did, and if so, the story is quite likely untrue. If persons with whom they come in contact are very magnetic, the benefit is well marked. Let me here relate a little incident in my own experience confirmatory of this statement:

While in Troy, N. Y., on a professional visit many years ago, a gentleman hobbled upstairs to my rooms to consult me regarding rheumatism in one of his knee-joints, which had been very painful, and which had made his limb stiff for over a year. It appeared very difficult for him to walk, and the invalid exhibited in his countenance that contortion of features so peculiar to one suffering pain, that no one in health could possibly imitate. Then, too, the knee was red and swollen. I gave it a very careful examination, following up each muscle that could be reached, with my fingers, for several inches, to see if I could discover any adhesion or rigidity. I then examined his blood, stated my opinion, and my terms for treatment. He expressed himself favorably impressed with the interview, and promised to call in the afternoon and decide whether or not he would place himself under my care. He had hardly been out of my rooms ten minutes, when he returned with a look of indescribable surprise, and exclaimed: "What have you done to my knee, Doctor?" "Why do you ask?" I interrogated. His reply considerably astonished me, for he said he had both descended and ascended the stairs without pain, and at the same time gesticulated with the limb, moving it backward and forward to show its mobility. I of course saw at once what my magnetism had done for it

while manipulating his muscles, and explained the philosophy of the phenomenon. I say I was astonished because I did not exercise my will-power, as I am in the habit of doing in imparting animal magnetism. It was an act of unintentional magnetic piracy on his part, and he bore off his booty in triumph. I could not have been more successful if I had seated myself deliberately and magnetized his painful joint.

I could fill several pages with similar incidents—I will, however, occupy space with but one other. A young woman called upon me in consultation, and I made a note of her most prominent symptoms, but gave no treatment. One of these symptoms was a lifelong headache. Six weeks after this call she visited my office again for treatment, and as she said nothing of headache I expressed my surprise, when she replied, "Why, Doctor, I have not had a particle of headache since I called on you before." Having been a reader of my publications she seemed to understand how it had been relieved.

In all such cures, if cures indeed they can be called, I am inclined to question their permanency unless the magnetic treatment is supplemented with good vegetable alteratives to remove the deep-seated predisposing cause or causes. Magnetism should not be relied upon to the exclusion of other remedies. Those who do ride the "one hobby" have a great many hard things said of them, which they partly deserve. They also bring to contempt an agency for the amelioration of human suffering which is worthy the attention of all intelligent physicians, and of their patients whose maladies might be benefited by its employment. While there are some invalids so peculiarly affected that they cannot be restored without magnetic treatment, the majority of these very cases cannot be radically cured by this agency, unaided by suitable medicine.

The benefits derived from Massage are largely due to the magnetism of the operator, and the more magnetic the operator, if his magnetism is agreeable to the patient, the greater will be the relief obtained. The massage, as defined in the dictionary, is a "system of remedial treatment consisting of manipulating a part or the whole of the body by percussion." A "Masseur" is a male massagist. A "Masseuse" is a female massagist. As most of my readers are aware, massage is widely practised, especially in large cities, where specialists are well supported. The kneading, the slapping, and the rubbing, as performed by the experienced operator, greatly benefits enfeebled muscles, vitalizes weak nerves, and promotes circulation. Such manipulations would doubtless impart some benefit without the magnetism of the operator, but with it they are far more efficacious if the magnetic quality of the operator is suited to the patient. It is doubtful if one could derive any help from a masseur or masseuse who is distasteful, or whose touch is not agree-

able. Nor is a masseur as efficacious with one of his own sex as with a person of the opposite sex, or vice versa, for reasons that will appear obvious to one who reads what I have said under the head of Sexual Isolation. "In civilized communities," according to Dr. Balls-Headley, in so conservative a medical paper as the *Medical Record*, "more than half the women under thirty years of age are unmarried; in other words, the sexual instinct, during the first half of its existence is in most women ungratified. Hence spring," in Dr. Balls-Headley's

FIG. 113.



JAPANESE MANIPULATORS.

opinion, "many sexual disorders." Now, it is not indispensable that sexual intercourse should take place to supply a much-needed want to women thus affected. They need not only animal magnetism, but *masculine* magnetism, and this they could obtain under the professional and entirely proper treatment of a masseur. With the greater freedom enjoyed by men there are comparatively few young men who greatly suffer from a want of female magnetism, and yet

there are cases to be found among men that might be materially benefited by the manipulations of a masseuse of the right adaptability.

In Japan the natives have successfully practised the massage from away back, and their manipulators are usually blind men who go about with a long wand in their hand and a reed whistle in their mouth, as represented in Figure 113. The whistles are used to acquaint the residents along the thoroughfares through which they are passing of their presence, as the horn or the bell of the huckster is employed in our streets to attract customers. In Figure 114 is a picture of a Japanese masseur applying his cure to a female patient. In the picture the latter is represented with drapery, but I am assured by E. A. Wilson, for a

long time attached to the Naval Service off the coast of Japan, that in the actual operation female patients, as well as male, are entirely nude, for in that part of the world neither men nor women make any effort at concealment when taking their daily baths. It is therefore manifest that blind operators are not chosen for the purpose of avoiding the exposure of the person of the patient; just why, Mr. Wilson could not inform me. In this country, where even the nude in art is considered objectionable by our most conventional people, blind masseurs and masseuses would be considered especially qualified for the practice of this art. But even with two good eyes in the head of the operator the practice of the massage is steadily growing.

FIG. 114.

People are often relieved of pain by animal magnetism without knowing the active agent employed. There are many embrocations extensively advertised, and sold, which possess absolutely no merit in themselves, while the real benefit attending their use arises from the direction—"Rub in briskly with a warm hand for several minutes!" External remedies possessing valuable properties are always rendered more efficacious by the observance of such directions. In the religious world we find people employing animal magnetism combined with religious faith in the curing of disease, notwithstanding the fact that Mesmer was denounced by the clergy, and his discovery pronounced an attempt to use demoniac influence in relief of the sick. Not only does the devout Catholic resort to the influence of magnetism in an indirect way, but the Church of the Latter Day Saints depends almost wholly upon it when overtaken by disease. While anointing the sufferer with oil (sweet oil) they practise the laying on of hands, first rendering the patient passive and receptive by prayer. A correspondent in Utah, a reader of the earlier editions of this work, wrote the author that he had been exceedingly interested in my views on elec-



JAPANESE MANIPULATORS.

tricity. The author of the work mentioned above, who was a member of the Church of the Latter Day Saints, wrote the author that he had been exceedingly interested in my views on elec-

tricity and animal magnetism after observing what the elders of the church could do with their sick disciples by the laying on of hands and the use of "sanctified oil." He said the results looked like miraculous phenomena, but after what he had read in this work he was satisfied they were due simply to animal magnetism. While spending a little time in Salt Lake City, I found that the Mormons had quite an aversion to medicine, but they seemed willing to take mine, for when their own resources failed they had more confidence in botanical remedies than in any other.

Dr. Cox's work attributes the success of "spiritual mediums" to what he calls psychic force, which, as I have already claimed, is only another name for animal magnetism. But even if the medium is made the instrument of some unseen power, as claimed by the faithful believer, in the light of what has already been presented, it is fair to suppose it is the magnetism of the disembodied spirit, if not of the medium, that gives relief to the patient. Dr. James R. Cocke, in his work on Hypnotism, says he believes it "has played a great part in the political and religious histories of the world, and is as important as a sociological factor as a healing agent."

### Water.

In all ages of the world, and in all nations, civilized and barbarous, water has ever been held in high estimation as a remedial agent. Hippocrates, Pindar, Thales, Virgil, Pliny, Galen, Charlemagne, Hahnemann, Priessnitz, Wesley, and all distinguished philosophers, physicians, and theologians, ancient and modern, have extolled its virtues. It was Priessnitz who made it a "one-cure-all." He was the first to open a "Water-Cure." Priessnitz was great, but Priessnitz was an *enthusiast*. Still his enthusiasm was the result of extraordinary success, compared with the medical exploits of the allopathic profession with which his rural abode was surrounded. His hydropathy cured thousands—hundreds managed to survive the barbarities of allopathy. He killed a few—allopathy slaughtered daily more than Priessnitz healed. The zeal of a military chieftain heightens with the number he slays; that of a medical practitioner with the number he keeps alive. Is it strange that Priessnitz was an enthusiast?

Yet the establishment of the school called hydropathy was an error. Water was *not* an infallible remedy, and less so in the hands of the disciples of Priessnitz than in those of the great founder himself. The latter was naturally gifted with peculiar skill in the application of water, which characteristic exhibited itself in the juvenility of the son of the Graefenberg farmer. But a medical education would have materially modified his "one-idealism." Priessnitz did not possess that.



Had he explored the green fields and forests of Nature, as well as laved in her limpid waters, he would have been less exclusive in his choice of remedies, and his practice, and that of his imitators, would have been more uniformly successful. At the present time, sanitariums have entirely taken the place of what used to be called "water cures" in this country. This change was suddenly and arbitrarily effected by the medical legislation which went into effect in nearly all the States of the Union between the years 1874 and 1890. Such legislation bore down with undeserved severity upon those who did not believe in medicines, but who did have entire faith in the curative virtue of water.

The statutes, if they must have been enacted, should at least have been tempered to permit the intelligent disciples of Priessnitz to practise a system which the disbeliever in drugs could have recourse to, for there are many such prejudiced individuals in this world, and our laws cannot compel them to take medicine. For people of this way of thinking, the hydropathic system was a boon. Such legislation was arbitrary and cruel to many who had devoted all their early years to the study and practice of this method. One case in point may be cited. There were doubtless many of them. In the city of New York we had a Dr. Schieferdecker, an original and accomplished gentleman well up in his school of practice, but he did not believe in medicine, and naturally

enough with this disbelief he had never studied the materia medica of any school. I happened to belong to one of the Boards of Censors of one of the legalized medical societies at that time, and at a meeting of this Board at my residence, a tall, stately, intellectual man applied for a license to practise. It was Dr. Schieferdecker, who was well-known to have an extensive practice in the city of New York among some of its wealthiest and most influential citizens. He frankly confessed he had given little attention to materia medica, for he had no faith whatever in the treatment of disease by drugs. As the hydropathists had no organized societies to whom he could appeal, he came to us. Under the laws of New York then existing, a practising physician was required to have a license from some one of the medical societies recognized by the statutes of the State. I did my best to pull him through. I argued

FIG. 115.



PRIESSNITZ'S MEDICINE.



with my fellow-members of the Board without avail. I urgently advised the granting of a license to the Doctor to practise his specialty—hydropathy. It could have injured nobody but his wilfully blind disciples who could not be prevailed upon to take a dose of medicine of any kind, old school or new. As the old adage puts it, "Any man can lead a horse to water, but a whole regiment of them cannot make him drink." And so it is in medicine, when a doctor attempts to force a hygienist who abhors drugs to take his prescriptions. Persuasion and law are powerless. I found it equally difficult to convince my colleagues that Dr. Schieferdecker should receive a license, and the disappointed man went away empty-handed. He soon became involved in worrying lawsuits instituted by the "regulars," and shortly after his obituary was published in the newspapers. The story, briefly told, is that he was hounded to his death by envious contemporaries who had the law on their side! This was not magnanimous. It was cruel. It was barbarous. But this is a digression. I am treating of water as a therapeutic agent and will return to the subject.

While I do not deny the contracting and relaxing influences of water, according to its temperature and the beneficial effects of each of these in appropriate cases, I maintain that the real philosophy of "water-cure" is based on electrical principles. Water possesses a great amount of electricity. *If the blood of an individual contains its natural supply of iron, it attracts the electricity from the water, thereby rendering the body of the invalid in an electrically positive condition compared with the atmosphere. As soon, then, as the application has been made, an active radiation of electricity from the system takes place, which accelerates the escape of effete matter, and renders the pores, skin, and other organs more active.* It is, therefore, diametrically wrong to resort to water in the treatment of invalids with thin blood. Did hydropathists, generally, understand this philosophy, "water-cure" would not prove so often *water-kill*. My theory is indirectly supported by that of Priessnitz. According to Claridge, he held :

1st. "That by the hydropathic treatment, the bad juices are brought to, and discharged by, the skin.

2d. "That a new circulation is given to the diseased or inactive organs, and better juices infused into them.

3d. "That all the functions of the body are brought into a normal state, not by operating upon any particular function, but, upon the whole."

Now, when we consider that whatever moves has a motive power, and that "better juices" cannot enter, or "bad juices" depart from the system, without some active agent to move them, my theory is not only rendered plausible, but probable. Thus, when the electricity of the water enters the body, water must necessarily go with it, because

its relations are such with that element that it forms a part of it ; and in this way better juices are infused. When the application of water ceases, the body being electrified by that fluid and rendered strongly positive, compared with the surrounding atmosphere, active electrical radiation ensues, carrying with it the "bad juices" which nature, in its instinctive wisdom, is ever ready to dispose of when opportunity is presented.

The great amount of electricity possessed by water has been demonstrated by Professor Faraday, and is now generally admitted by chemists. His experiments show that the quantity of electricity set free by the decomposition of ten drops of water is actually greater than exists in the most vivid flash of lightning.

In bloodless patients even tepid and hot baths are injurious, because the blood does not possess the attractive property or iron to draw in the electricity of the water, while its temperature relaxes the tissues and leaves the system open to the ingress and progress of disease. It is safe to say that a majority of invalids suffering with debility, nervousness, consumption, and predisposition to apoplexy, should not receive full hydropathic treatment. In many cases of these descriptions it should not be administered at all, and in most only sparingly and with great discrimination.

Satisfied of the virtues of water as an *auxiliary* agent, I have resorted to it extensively in my practice, and by exercising the most careful discrimination, with uniform success. Simple and abundant as this remedy is, it is something which cannot be trifled with. Many good men and women have unwittingly committed suicide with water. Hydropathy is not as popular to-day as it was fifty years ago, on this account. It is a great pity that mankind is disposed to abuse and misuse almost every good thing.

I have assiduously pursued the botanic, the hydropathic, and the magnopathic methods of practice, and would rather abandon my profession than to discontinue any one of them, although I must candidly confess that I would rather give up hydropathy than therapeutic electricity were I obliged to remove one plank from my medical platform. If forced to drop one, the choice would rest between water and electricity, and I am thoroughly convinced that the latter can be made far more conducive to the requirements of the invalid than the former. My attention is wholly devoted to the treatment of chronic diseases, and in such my experience demonstrates that electricity can be made more available. In the treatment of acute disease, particularly fevers, water may be, and without doubt is, preferable. But for all around practice there is nothing to-day which answers so many indications as the botanical materia medica with the marvellous progress it has made in the past twenty-five years. Call me what you like. I stick to "my first love." I am a *botanical* practitioner.

### Medicated Inhalation.

Having found this system of treating pulmonary diseases a valuable *assistant* in my practice, I should not close this chapter on remedies without, at least, an allusion to it. I have heard much said of curing lung and bronchial diseases by medicated inhalation. Allow me to make the bold assertion that a disease of the pulmonary organs was never *radically cured* by medicated inhalation alone.

In support of this view, I have only to invite the attention of the reader to a consideration of the causes which lead to pulmonary and bronchial complaints. It is well known that an abscess under the arm, tubercles on the skin, and ulcers on the limbs, denote an impure condition of the blood, from which they all arise. Is it not, then, self-evident that any of these difficulties located in the delicate membranes of the respiratory organs give evidence of and spring from the same cause? Is there an *Æsculapian* wiseacre who can command enough sophism to seemingly disprove this?

The blood is not impartial in the distribution of its impurities, but invariably sends them to that part of the system which has the least power to resist them. Hence, persons having a scrofulous or canker humor in the blood, and at the same time a predisposition to weak lungs, the worst form of ulcerous or tuberculous consumption is in time developed. The question then arises, will medicated inhalation cleanse the blood of its impurities? If not, how can a radical cure be effected?

There are other forms of consumption, such as those induced by amenorrhœa, thin blood, solidification of the lungs, etc. The first, of course, is peculiar only to females. Will inhalation remove the cause from which springs the effect? The second arises from general debility, and a diseased action of the liver and kidneys. Will inhalation arouse the lethargic functions of the system, and restore to the blood its strength and nutrition? The third either grows out of one of the different forms of consumption first considered, or else from a weakness of the nerve or electric force, which expands and contracts the air-vesicles and moves the diaphragm. The medicated vapors inhaled must therefore possess miraculous powers in the restoration of the tone of the vascular and nervous system, or a cure cannot be effected.

Consumptive invalids, who resort to inhalation alone for relief, as well as physicians who practise on that system, lose sight of one important fact—*i.e.*, *consumption of the lungs and bronchitis are only the EFFECTS of other derangements of the system.*

It is unnecessary to occupy space with an argument to show how certainly a convalescent consumptive must relapse when *effects* are treated and *causes* left undisturbed. If this essay should happen to meet the eye of any one who *thinks* he has been cured of consumption

or bronchitis by inhalation, let me assure him that either his physician was mistaken in the diagnosis of his disease, or his old complaint still lurks in his system, ready at any favorable time, when exposure occurs, to return with redoubled virulence.

I prescribe inhaling remedies in pulmonary and bronchial difficulties, for the same reason I do washes and ointments in the management of cutaneous diseases. Local applications are often necessary, while the slow but sure work of purification is going on internally; but to rely on them exclusively is presumptuous, to say the least. I sometimes find it necessary to summon electropathy or magnopathy to my aid in battling the hydra-headed disease—consumption. I *always* prescribe invigorating and purifying blood medicines in addition to medicated inhalation, and should as soon think of dipping out the Croton River without cutting off its tributaries, as to attempt to cure consumption without them.

#### Conclusion.

The *successful* physician does not ride "one hobby." One-ideaism in medical practice is perfectly incompatible with uniform success. Then, too, different constitutions require different remedies. A "one-cure-all" is an impossibility. One hat will not fit everybody's head—one coat everybody's back, nor one circumscribed medical system everybody's disease. The medical profession generally must mount a more comprehensive platform.



## CHAPTER V.

### DOCTORS.



BEFORE passing a criticism upon the profession myself, allow me to give a few specimens of the hard raps they receive from various sources. Some graceless wag has said that "Physicians are the nut-crackers used by angels to get our souls out of the shells that surround them!" When Voltaire was informed that a friend was preparing for the practice of medicine, he exclaimed: "Why will he be so mean? He will have to thrust drugs of which he knows little, into a body of which he knows less!" A story is told of a doctor and a military officer who became enamoured of the same lady. Somebody inquired of her which of the two suitors she intended to favor. Her reply was, that "It was difficult for her to determine, as they were both such *killing* creatures." The *Portland Transcript* relates that at a "Medical Convention holden at Lewiston, the clergy and members of the bar were invited to a repast given at a hotel by the followers of Galen; and after the cloth was removed, during the interchange of sentiments, the Rev. Mr. B., while alluding to the intimate relations between the clergy and the physician, in all seriousness remarked, that it was a somewhat singular fact that '*When the doctor was called, the minister was sure to follow.*' The doctors gave him three cheers." A newspaper at Lynn, noticing this scrap, remarked that it was reminded of a hard hit at the doctors, which may be found in the Bible, in the 16th chapter of the second book of Chronicles: "And Asa in the thirty-ninth year of his reign was diseased in his feet, until his disease was exceedingly great; yet in his disease he sought not to the Lord, *but to the physicians.* And Asa slept with his fathers, and died in the one and fortieth year of his reign." Still another editor thought he discovered a harder rap on the medical fraternity, in St. Mark's Gospel, 5th chapter and 26th verse, relating to a "certain woman who *had suffered many things of many physicians*, and had spent all that she had, and was nothing bettered, *but rather*

*grew worse.*" The unkindest cut of all has been made by the *Cleveland Leader* on the surgeons, and this is what it said :

They sawed off his arms and his legs,  
 They took out his jugular vein ;  
 They put fancy frills on his lungs,  
 And they deftly extracted his brain.  
 'Twas a triumph of surgical skill  
 Such as never was heard of till then :  
 'Twas the subject of lectures before  
 Conventions of medical men.  
 The news of this wonderful thing  
 Was heralded far and wide :  
 But as for the patient there's nothing to say,  
 Except, of course, that he died !

FIG. 116.



THE "DOCTOR" IN THE BOW.

Where the editors stopped in this tirade it is difficult to say ; but one of our city physicians received a "stunning" surprise from a red-man, when on a summer vacation in Michigan, a few years ago. Dr. G. was being rowed across the St. Clair River by two Indians, who had a stupid, half-drunken companion stowed away in the bow, whom they familiarly called "Doctor." Dr. G.'s curiosity was aroused, and he inquired why they called that man Doctor. The red-men rowed away lustily without replying, knowing that their guest and patron was a physician. Again he asked, and received no response. The Indians evidently did not like to tell. As they neared the shore, Dr. G. could endure the suspense no longer, and approaching within whispering distance, again repeated the question : " Why do you call that fellow





could be done, and they feel perfectly resigned to the will of the Supreme Being! Men of no medical attainments whatever often succeed, through good sense and ingenuity, in curing people who have been set aside to die by the doctors. It has almost become a proverb that a good nurse is better than a physician; and an invalid is more ready to take the advice and herb-tea of some good old mother or "aunt," than the counsel and drugs of the polished physician. Indeed, the latter is often employed for no other reason than to silence the clamor of friends, who would be shocked if the patient should die without the attendance of a popular doctor. The chaise at the door, and the gold-mounted cane in the hall, are evidences that nothing is left undone which may in any way contribute to the restoration of the one prostrated on a bed of sickness! Still another reason for the lack of confidence of the people in physicians, and the partial failure of the latter in making themselves worthy of confidence, will be found in the next essay.

#### Doctors "Jacks at all Trades."

There can be no greater folly in a physician than to attempt, within the brief period of his mundane existence, to acquire skill in the treatment of *all* diseases to which mankind is subject. A large majority of the members of the medical profession are like the versatile mechanic, who is said to be a "jack at all trades and master of none." Any man who tasks his ingenuity by trying to unite in himself the house-carpenter, the joiner, the cabinet-maker, the carver, the pump-maker, the ship-carpenter, and chair-maker, may generally be set down as a man of extensive pretensions and meagre executive abilities. The professional man who assumes to combine in himself the politician, the pedagogue, the editor, the pettifogger, the dominie, etc., may possibly exhibit some little tact in all, but he will as surely excel in none. So with the physician who would be a skilful surgeon, an accomplished accoucheur, and a successful doctor, in diseases, both acute and chronic; he divides his attention to such a degree as to render him unskilful in the performance of the duties of any one of them.

There ought, at least, to be *three* distinct branches in the medical profession. *The Surgeon*: He must be a natural mechanic, and as well acquainted with the mechanism of the human system, as the watch-maker is with the fine works of a time-piece. His sympathies must be sufficiently blunt to enable him to take the human system apart with a steady nerve. He must be as deaf to the cries of his patient as if he were moved by machinery like an automaton. *The Physician in acute diseases*: He must have a fair knowledge of anatomy, and be thoroughly accomplished in *materia medica*. He must be sympathetic, and recognize the value of psychic medicine; a constant student, and thoroughly ac-



whose experience is daily ripened in his exclusive attendance upon the calls of sufferers with acute diseases; one with neurasthenia, consumption, or other lingering disease, would call upon a physician whose attention is solely given to the treatment of chronic disorders, in the constant management of which he is daily acquiring additional skill.

In trying to cover the whole ground, a physician cannot possibly acquire superior skill before his locks are hoary and his energies paralyzed with age, and then, to use a common expression, he "is too lazy" to put to active use the acquirements which long years of study and experience have bestowed on him. How many, too, the old man has killed in preparing himself for skill and eminence, which he cannot bequeath to any younger relative or friend.

What nonsense, then, for men to attempt to grasp knowledge and skill in all branches of the healing art, blundering along through years of unproficiency, dodging from the operating-chair of a surgeon to the sick-bed of a feverish patient, and from the accouchement-bed to an examination of, and prescription for, a chronic disease of the lungs, liver, kidneys, stomach, or something else.

So far as I am concerned, I wish it distinctly understood that I have nothing to do with surgery or acute diseases, my whole study and practice being solely devoted to complaints of a chronic nature. In these I claim to be proficient, and stand ready to compare the results of my practice with that of any *ten* physicians, put together, who essay to treat all classes of disease.

For the benefit of such of my patients as need surgical operations of any kind, I have a separate surgical bureau under the management of a physician skilful in this department; but, personally, I meddle with nothing outside of my specialty. If physicians generally would pursue this course, the public would in time entertain a better opinion of the medical profession, and doctors would cease to be the butts of ridicule.

### Should We Have Women Doctors?

It seems really difficult to write a word seriously under this head, for the reason that when the question is presented to any impartial mind, it would appear that if there is any one vocation to which woman is better suited by nature than to another, it is the care of the sick. Look for a moment at the qualities requisite to make a good physician. They are: keen perception—intuition—sympathy—magnetism—patience—gentleness—love. No one, who has ever been stretched upon a bed of sickness, will omit from the category one of these qualities as unnecessary. Only two qualifications remain to be added, viz.: an enthusiasm to undertake the duties of the profession, and a thorough education. No one will dispute that the first qualities named are gen-

erally possessed to a greater degree by women than by men. Of the qualifications last mentioned, there is as little danger of women becoming doctors without a natural taste for the labors of the profession, as there is of men doing so ; and if any are disposed to assert that they are mentally incapable of acquiring an accomplished medical education when proper facilities are afforded, I suppose that person must be answered, although I blush at the indignity offered to women while undertaking the task. How do we generally find it in schools ? Is it indeed the case that boys learn more rapidly than girls ? *Reverse* the question, and teachers will respond " Yes." Some claim that girls cannot attain proficiency in mathematics. This has never been established by any satisfactory evidence ; and if it were, what need has a physician of a complete mathematical education ? Others have said that she is not inventive. It is true that she has not flooded the patent office with caveats and applications for patents ; possibly because husbands and fathers have usurped for their personal benefit nearly every thing which the female mind may have suggested. But an objection of this kind may be effectually met by the facts that Madame Ducoudray invented the manikin, and Madame Boivin some of the most useful obstetrical instruments in use. The lady last mentioned is the author of several medical works, which are regarded as authorities by many eminent medical men in Europe and America. Professor Meigs, of Philadelphia, in alluding to the valuable services this eminent woman has rendered to the medical profession, remarks that : " Her writings prove her to have been a most learned physician, and as she enjoyed a very large practice, her science and her great clinical experience, as well as her personal knowledge are more to be relied on than that of all male physicians together." In England, a person must pass a rigid examination to become a druggist, and a Miss Garrett passed " a five years' apprenticeship ; a preliminary examination in arts, and two professional examinations, each comprising five subjects." Miss Garrett was reported to have acquitted herself brilliantly, and the chairman of the apothecaries, after complimenting her ability, expressed a wish " that all men in the profession were as well prepared."

The first woman who aspired to become a physician had a hard time of it. The story is as follows : " Agnodice, a native of Athens, was the first regular qualified female practitioner of whom there is any authentic record, and gained considerable renown. At that time the laws forbade women to study medicine, but Agnodice, being evidently an advanced woman, disguised herself as a man, and succeeded in passing through the college—graduating with honors, 300 B. C. She practised among the women of Athens, with marked success, it is said, but eventually her secret became known, whereupon she was arrested, and only released in deference to the storm of protest from her sex."

The time is rapidly approaching, however, when the success of women in the practice of medicine will be so well established that no one will have the effrontery to question her capacity in this pursuit. Since Elizabeth Blackwell graduated from the medical school at Geneva, N. Y., in the year 1849, various medical colleges and hospitals have been established for the benefit of female students and practitioners.

There are medical institutions for the instruction of women in this city, Philadelphia, Cincinnati, Cleveland, and other cities of the United States. There are about three thousand female physicians in this country, who graduated regularly from chartered institutions. Some of these have incomes of ten or twenty thousand dollars per year from their practice.

In England, France, Germany and Austria, women have been admitted to practice. While writing this a press dispatch from Budapest, Hungary, says the "Royal Society of Physicians here has just ended a long debate to decide whether women doctors should or should not be admitted to membership in the society. A resolution was finally voted to revise the statutes of the society so as to allow of their admission. Ninety-one members voted for and forty-four against the women."

At this rate it will not take many years to convince the most knotty conservative mind that women will practise medicine, and that, too, with credit to themselves and satisfaction to their patients.

There is one point wherein those favorable to women as practitioners of medicine fail to appreciate the benefit which may accrue when women doctors become available in every part of the country. The presentation of it at this time will sound as ridiculous as the claim of women to study medicine did half a century ago; but I trust that a score of years will not pass before it is recognized. It is this: *Male invalids should have female physicians, and female invalids should have male physicians.*

One great argument used at this time for the admission of women to the practice of medicine is, that they may attend to the diseases peculiar to their own sex; but if the truth were fully known, the secret of the opposition of women to their own sex aspiring to fame in the medical profession springs out of repugnance, in a measure, to any such arrangement. Women do not want female doctors to attend them. There are, of course, some actual and many seeming exceptions to this rule; but if there were as many eminent women in practice at this moment as there are men, the majority of women would at heart prefer that the latter attend them; and so soon as women conquer all prejudice and become famous as doctors, men will not hesitate to exhibit a preference for female skill. This secret crops out even now, and may be perceived by any observer. The sick man who has a skill-

ful female nurse in his room is charmed with her attentions, and takes her advice and the little dainties she prepares, without hesitation. The visit of his physician is accepted as an evil that cannot be dispensed with, and when he has departed, the patient sagely questions the *rationale* of his counsels and prescriptions. On the other hand, the sick woman, if her preferences in the selection of a physician have not been wantonly disregarded, dotes on the call of her doctor, and feels better when he is present. She takes his doses about as submissively as the sick man swallows the pleasant things the nurse prepares. The philosophy of all this may be discovered in the essay on "Social Magnetism," etc., commencing on page 195. I have taken some pains to ascertain the sentiments of intelligent patients of both sexes on this point, and although they at first appeared startled at the novelty of the idea, having never thought of such a thing before, they almost without exception, on reflection, agreed that such an arrangement would best accord with their individual preferences, if skill were equally shared by the doctors of each sex. As things now are, the most steadfast friends of the family doctor are women. Every woman who has a really good physician recommends him to everybody, and is impatient because she cannot induce her next-door neighbor to employ him. To her imagination, he is about the nicest man, and the most skilful doctor the world has ever produced. Men never get so enthusiastic over their medical adviser, although they may express gratitude when relieved of pain by him. In the latter case, the relief is obtained mainly through the effects of medicaments administered ; but with the woman, the benefit is about equally derived from the medicines and the magnetism of the doctor. He presses his hand on her brow, feels her pulse, sits for awhile beside her, and chats as only a person of one sex can talk with one of the other. The conversation becomes flippant and cheerful ; the spirits rise like mercury in the thermometer when held in a warm hand ; the effect is magical ; and when he departs, she looks forward with pleasure to the next call, while taking his prescriptions with confidence and alacrity during the interval. This, understand me, when she has the physician of her choice. Woe to the doctor if she does not like him personally ! She hesitates to send for him when her friends think it necessary. She never did take such nasty stuff before ! She knows it can do her no good ! " Oh, dear, how can my husband have any confidence in that fellow ? "

Now, reader, here is a new crotchet for you to mentally digest. Bring the results of your observation, your personal experience, physiological and magnetic law, to bear upon its consideration. Dismiss all idea of any impropriety in employing a female doctor if a man, or a masculine doctor if a woman. Indeed, the latter have had very little medical care from any other source than that of their opposite sex ; but



scarcely anybody seems to have discovered any impropriety in the custom which sanctions it. I speak now as a man's-rights-man! I demand for our sex the medical education of women in order that we may, when sick, have their sympathy, advice, and medical care. Who can consistently oppose the proposition? Certainly not those women who have objected to the medical education of women, because they are satisfied to have only male doctors; this would be selfish. Nor yet men who think the latter may be with propriety employed to attend their wives and daughters in all cases however delicate. "What is sauce for the goose is sauce for the gander!" It is, then, left for those only who are in favor of female medical schools and practitioners, to urge an objection. Nothing can consistently come from this quarter; for when women physicians become numerous, it may, in sparsely settled regions, be quite as difficult to employ a male practitioner as it is now to find a female physician. The latter may take the place of many of the former entirely in some localities; so it will be perceived that "things will become mixed," unavoidably, unless we have some definite idea of the distinct functions of male and female practitioners, and act upon it. If it be decided that we must have female doctors for men, and male physicians for women, it will encourage the settlement of those of each sex in every neighborhood, large or small; and then, when anyone has an affection of a very delicate character, peculiar to his or her sex, there will be an opportunity to "change base," and present the case to a physician of the same sex as the patient.

#### Rapacious Doctors.

The finny inhabitants of the sea have sharks among them. On land there are beasts and birds of prey. The human family is not exempt from analogous specimens. There are vampires among all classes, trades, and professions. Sharp practice in trade, however, produces no immediate effect upon any thing except the pocket; but the physician who prostitutes his profession by frightening, and then picking the pockets of the sick, places himself on a level with those monsters in human shape, who, amid the crash and ruin of earthquakes, sack falling buildings and rifle the bodies of the prostrate and dying. "Your money or your life!" is the ejaculation of the highwayman, and it is morally and practically the demand of the rapacious physician. These strictures by no means apply to those who, by assiduous devotion to the studies and duties of the profession, acquire a reputation which enables them to charge and receive large fees for their services. It is perfectly consistent with the commercial spirit of our imperfect civilization, and in exact keeping with the business understanding which our social system has established, to do so. The minister of the gospel



who possesses the greatest power to edify a congregation, generally finds it his Christian duty to accept a call from the church which pays the highest salary. The lawyer who has gained a reputation in his profession is so beset with clients that he can keep his practice within the limits of his physical endurance only by charging such fees as will frighten away from his office what are commonly denominated "small

FIG. 117.



THE TERRIFIED LADY.

fry." The merchant who possesses a mind that enables him to conduct an extensive establishment, makes his millions per year, while his smaller competitors are satisfied with their thousands or hundreds. The experienced navigator, who can trace a path covered by fathomless water, commands a larger salary than the captain of an oyster sloop, who guides his craft by landmarks and light-houses. The mechanic who has acquired such skill in handicraft as to be able to construct a steam-engine, receives greater pay than one who can only hammer out a

pot-hook. The farmer who has studied so deeply the science of agriculture that he rivals his less enterprising neighbors in the production of fine crops, receives a correspondingly larger compensation for his wisdom and industry. Even Bridget, in the kitchen, who understands all the arts of cooking, receives five or ten dollars more per month than her muscular sister who can only do the household scrubbing. It is, therefore, entirely in harmony with the established law regulating compensations, for the skilful physician to limit his personal labors to his power to do, by charging fees commensurate with his ability; but the rapacious doctor is one who, for the express purpose of making fees, alarms those who consult him. I will give a couple of illustrations of an aggravating character which came under my immediate observation. One Sabbath morning I was summoned to my consultation-room by a woman about thirty years of age, who looked the picture of despair. Every feature betokened agonizing distress. She had passed many sleepless nights in apprehension of an early and painful death. This apprehension was occasioned by consultation with a doctor who pronounced her disease, cancer in the stomach; and, as if this diagnosis was not sufficiently alarming in itself, he told her she would not live six weeks if she did not have immediate medical attention. Fortunately he placed his fees above her ability to pay. I say fortunately, because had she become his patient, she would have been frightened and drugged into a condition of disease. Unable to raise the required money, she sought other advice. After examining her case I assured her that there was nothing in the world the matter with her but a slight attack of gastritis, caused by some imprudence in eating. She had consulted the doctor only on account of momentary pain, such as anybody may have by eating something which might disturb the digestion. After some effort, I quieted her fears, and sent her away without fee or medicine. Some months after, she called to assure me of the correctness of my diagnosis, and to thank me for the mental relief my opinion had rendered. Case number two was a planter from Louisiana, who had come to the city to sell a cargo of sugar. He had the appearance of a man of means, and was a capital subject for a rapacious doctor. He called upon me with the remark that he had stricture of the urethra. Upon examination, no symptom warranted any such supposition, and I asked him why he had imagined that he was strictured. He replied that he had, before leaving New Orleans, a disease of the urethra liable to result in stricture, and that on arriving in New York he had consulted a physician to ascertain if such a difficulty was developing. The doctor examined his case, and gravely decided that the urethra had already become the seat of stricture. He prescribed for him, and received a fee of thirty dollars! Making further investigation, to be sure that I was quite right, and finding not the

first indication of any complaint, I assured him that there was nothing at all the matter, and advised him to let medicines and doctors alone; but the idea seemed fixed in his imagination that there was, and with strange persistency, he inquired if I would not undertake his case. What, thought I, shall I do with this man? My business and moral faculties had a soliloquy. The latter told me that if I accepted his money it would burn my pocket and disturb my sleep. Finally, I said: "Mr. A—, let this alone for four weeks, and if at the end of that time anything like stricture shows itself, I will prescribe for you." He departed, and in less than ten days called again, and informed me that he felt an unusual uneasiness in the urethra. On examination I found the orifice inflamed, and inquired if he had not been using bougies. "Yes," was his response, "the doctor who before prescribed for me, advised them." I urged him to let the supposed affection alone, as he was causing irritation; and made him promise that he would wait the time I had before advised; but before the expiration of twenty days he fell into the hands of another rapacious medical concern, more ravenous than the first—had paid \$100; and now they demanded \$1,400 more before they could perfect a cure! The man was so thoroughly scared that he actually thought of accepting these exorbitant terms, and it was with difficulty that I talked him out of the notion which the doctors had talked into him. Determining not to be remotely accessory to the robbery of this frightened man, I refused, from first to last, to receive one cent from him. I say this in justice to myself, for it is due to my self-respect, at the close of this remarkable story, that I should publicly wash my hands of all participation in the revenue accruing from the sharp practice of the doctors in this case. Whether he finally followed my advice I am unable to say, as he did not call again.

While some people are not apt to realize the danger they are in when diseased, many become unduly alarmed on the slightest occasion of pain or other physical disturbance; and it is better that the former die in their ignorance, than that the latter should be frightened to death by an intentionally deceptive, or a careless diagnosis. It, therefore, should be the aim of the honorable physician to avoid arousing unnecessary alarm in the minds of invalids or those who may imagine that they are sick; and the latter should not be too credulous when a doctor tells them that their symptoms indicate danger. Indeed, the honesty of any physician may be suspected when he takes apparent pains to impress on the invalid a sense of anxiety about himself. This duty may safely be left to the friends of the invalid if he be not himself sufficiently concerned to take the necessary steps for effecting his recovery. Anxious mothers, sisters, husbands, and wives are generally quick to observe the signs of failing health in one they love, and unfortunately

## DOCTORS WHO BANK ON REPUTATIONS OF OTHERS. 371

they sometimes unduly alarm the invalid by their expressions of solicitude. In no case is it necessary for the doctor to do so, even in expressing a candid opinion, as there is a way of pronouncing an unfavorable diagnosis without arousing the timidity of the patient.

Fortunately for the sick, the practice of medicine has a humanizing effect upon the hearts of men who pursue it. Daily contact with suffering humanity develops sympathy and liberality, so that even the mercenary doctor of to-day may in time become too considerate of the health and life of those who consult him, to prey upon their fears.

### Doctors Who Bank on the Reputations of Others.

Before concluding this chapter it may be well to put the reader on his guard against the impositions of those who seek to gain favor and practice through representations that they are in some way related to, or professionally connected with, a physician who has gained eminence by his success. This deception is in some instances resorted to, and for a time quite successfully. I will mention one which will serve to show how easily an intelligent community may be victimized by a fairly agreeable looking man who has some native ability combined with what may be called "colossal cheek." In the early part of the eighties, word came to the writer from Fargo, N. D., that a physician had put out his shingle there with the representation that he was the son of Dr. E. B. Foote, the author and practitioner of New York. I at once caused the imposition to be exposed through the press of that city, and he was next heard of at Bismarck, where he had advertised himself as Dr. E. B. Foote, Jr. A patient residing in that city wrote to me inquiring if I had a son in practice there, and I made haste to dislodge him from that locality. Next his shingle appeared in Helena, Mont., and one of the local readers of my publications immediately acquainted me with the fact, so that he was soon broken up in this new field of his professional labors and characteristic deceptions.

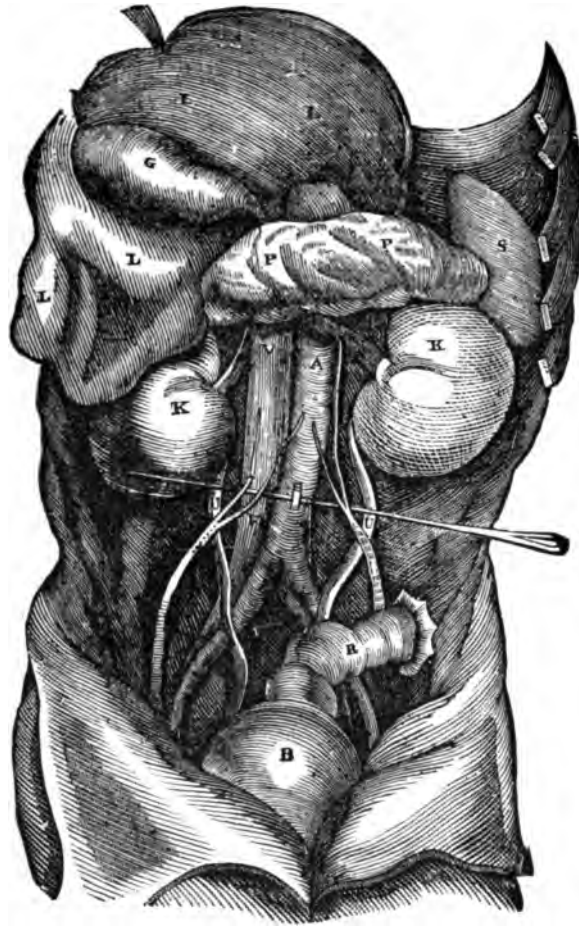
One would naturally suppose that after all this experience he would have dropped the name of Foote, Jr., and caught upon some other name that would have given him prestige. But no, he was next heard of in Salt Lake City, where he had borrowed \$1,500 from one of the local clergymen and opened a medical establishment, occupying the entire second story of a large brick building with a well displayed sign of "Dr. Foote's Institute." My publications had been largely read throughout the West, and I was professionally well known all through Utah. The information came quickly of the new-comer who still advertised himself as Dr. Foote, Jr. He had in his large reception-room a charming young woman, who did not dream of his being a fraud, to receive callers and to tell them that he was the son of the well known

specialist bearing his (assumed) name in New York City. She had been instructed to give glowing accounts of his father's practice, of the success of his "Medical Common Sense," "Plain Home Talk," "Science in Story," etc., not forgetting to add that the son had had the advantages of a superior European education, and that he was even better equipped than his father in New York for the successful treatment of chronic diseases. To these facts regarding her function she made affidavit when she came to know his real character. He had made arrangements with the managers of the railroads having lines centring there to sell excursion tickets at a reduced price to people of distant cities, villages, and mining camps, and on the strength of his reputed father's reputation his practice grew to such an extent that he was compelled to employ three medical assistants to help him take care of his numerous patients! His drug bill at one local pharmacy was said to average \$250 per week! He patronized the press of Salt Lake City most generously, and almost everything else, including the livery stables. He was an experienced equestrian and rode a handsome horse with much grace and dignity. In brief, to use a common expression, he "cut a swell," and was in "full feather" when I determined this time to appear on the scene in person. It was in the early spring of 1885 that I alighted from the train at the station in Salt Lake City, and judge of my surprise when I was at once accosted by a "cabby" who inquired if I wanted to go to "Foote's Institute!" I took carriage to the Walker House and had not been there many hours before the "big fraud" was pointed out to me as he passed the door, seated on his favorite steed, and looking as if he might have been the king of the cannibal isles. I at once determined, if possible, to have an injunction served on the impostor, but my legal adviser cautioned me that it might not be an easy matter to prove that his name was not Foote, or that he was not entitled to the name of Foote, Jr. This was before I had ascertained how ingeniously he was making it appear in his parlors and otherwise that he was directly connected with me. In his advertisements he dropped the initials "E. B." after having been driven from the other cities named, and at Salt Lake City he was known simply by the name of "Dr. Foote, Jr." I found the newspapers loath to expose him, as he was a generous patron at the advertising counters of the publication offices. I decided to open rooms myself and put out my shingle with the name of Dr. E. B. Foote, Sr., of New York. I had the entire ground floor wing of a hotel in the place, at that time called the Spencer House. This proved a successful scheme. The public preferred to see the Senior. They did not care to consult the boy when the old man was around! My rooms were crowded, and his parlors became the storage-rooms of vacant chairs. He gradually gave up his apartments one by one until he retained only two. As the readers

of my publications related to me their experiences when calling upon the impostor, their verbal statements were taken down by my stenographer, and affidavits were made by the relators affirming their truth. After spending some weeks with all I could well get through with in practice, equipped with a large armful of affidavits, I personally presented the evidences of the man's fraudulent practices at the law offices of Messrs. Sutherland & McBride, and in turn they laid them before Judge Zaue, who at once issued an injunction; but before the instrument could be personally served upon him the impostor, hearing of what had happened, decamped. If he had remained a few days longer, the Grand Jury would have taken the matter up and he would have been criminally indicted.

There is a genuine Dr. E. B. Foote, Jr., and he is associated with his father in practice, having graduated from the College of Physicians and Surgeons in 1876. He has been in practice by my side since his graduation up to the present moment, but it is unnecessary to say he is a widely different character from the one to which this narrative relates. When the Senior is for any reason absent from his office, the Junior is in charge. My absence during my trip to Salt Lake City covered a period of a little over two months on that eventful visit, and in 1890, through the urgent solicitation of friends and patients, I made a second professional visit to Salt Lake City, remaining several weeks. On my arrival the second time I found a gentleman from Idaho awaiting my coming with what the doctors had diagnosed as a tumor in the hip-joint. (Bear in mind this chapter is about doctors.) They had actually advised a hip-joint amputation! His suffering with pain in the joint was indescribable, banishing all refreshing sleep and threatening to end his mundane existence. One of the most noted surgeons in that region, it was said by the unfortunate man, agreed with other physicians whom he had consulted, and strongly advised the amputation of the limb! I found it to be simply a bad case of neuralgia, and in a week's time, without the aid of opiates, I had him sleeping comfortably, a luxury which had been denied him for many months, and in due time, with such remedies as I expressed to him at his home in Idaho, he made a complete recovery. "Doctors disagree," according to the old adage, and it is well that they do sometimes. Surgery is too often resorted to when medicine will remove the trouble. Good medicine may often take the place of skilful surgery. It may also effect what some occult means may fail to accomplish. The "Latter Day Saints" are as opinionated as the Christian or mental scientists are in regard to medicine, and when they are ill they apply to the elders, who treat them by "anointing them with oil and the laying on of hands." But on both of my visits to Utah, I discovered that they were not averse to taking doses of botanical medicine, and I found many patients and

FIG. 118.



THE ABDOMINAL CAVITY LAID OPEN.

The intestines are mostly removed, showing the descending aorta, A; the ascending vena cava, V; the liver raised up, exposing its under surface, L; gallbladder, G; pancreas, P; kidneys, K; spleen, S; rectum, R; bladder, B.



PLATE III.

P. H. T. PART II. CHAP. I.

VITAL ORGANS, BACK VIEW.



THE SKELETON AND VITAL ORGANS, RELATIVE POSITIONS, OBSERVED FROM BEHIND,  
AS BY AN X-RAY VIEW, BUT FAR MORE DISTINCT THAN THAT WOULD SHOW. THE LUNGS  
(NOT PICTURED) NATURALLY LIE BEHIND THE HEART, SPLEEN AND LIVER AS HERE SHOWN.

PLATE IV.

VITAL ORGANS, FRONT.

PLAIN HOME TALK.



FRONT VIEW OF VITAL ORGANS OF CHEST AND ABDOMEN, SHOWING THE LUNGS OVERLAPPING THE HEART, THE BORDER OF THE LIVER ABOVE THE STOMACH, AND THE INTESTINES COVERED BY THE OMENTUM.  
THIS PICTURE EXHIBITS THE NATURAL POSITION AND RELATION OF THE PARTS.

## PART II.

### Chronic Diseases; their Causes and Successful Treatment,

WITH CLOSING CHAPTER.

Containing Numerous Prescriptions for Common Ailments,  
Antidotes for Poisons, Valuable Suggestions  
for Emergencies, Etc.

### OPENING CHAPTER.

#### CHRONIC DISEASES.



THIS portion of "Medical Common Sense," designated as Part Second, will be devoted to essays on those forms of disease usually known by the name of *chronic*. To the treatment of chronic affections the author has given his undivided personal attention for a period of forty years. And, since 1876, his two sons, Dr. E. B. Foote, Jr., and Dr.

Hubert T. Foote, have been closely associated with him in a practice which extends over all parts of the civilized world. The Junior was graduated from the College of Physicians and Surgeons of the City of New York, which is well known as the medical department of Columbia University, bearing off the Seguin prize for proficiency, and Dr. Hubert T. Foote was a matriculant and graduate of the Eclectic Medical College of the City of New York. Their method of treating disease, however, is neither that of the so-called "Old School" nor "New School," but

pre-eminently Foote-arian, as evolved and developed in a long and successful special practice extending over a period little short of half a century. In the preparation of Part II., for the Twentieth Century Edition, I have called to my assistance these two younger men—for I can hardly call them young men, both having arrived at what is commonly called middle age—and before proceeding far with this opening chapter I shall avail myself of the art of the photo-engraver to make my indulgent readers acquainted with these two well-cut "chips of the old block." With these pictures for reference, it will hardly be possible for any charlatans to successfully represent themselves as my sons.

In the treatment of disease it often happens that a council of physicians is deemed desirable. In the office of the author there is ever such a council present, for "Dr. Foote and his Staff" consists not only of Dr. Foote, Sr., and his two sons, but of other thoroughly equipped professional associates in their various departments, the pharmacist, who is a graduate of the New York College of Pharmacy, having been engaged in the laboratory for nearly thirty years with experienced assistants. And just here let me once more give a note of warning to the reader not to be deceived by mountebanks like those exposed under the head of "Doctors Who Bank on the Reputation of Others," commencing on page 371. Not in a spirit of boasting, but as a mere statement of fact, which may have the effect of saving many of my readers from being grossly imposed upon by pretenders, I will add that for twenty years "Dr. Foote and Staff," composed of myself, two sons, and loyal assistants, have been the only specialists bearing the name of Foote of international repute practicing in the city of New York, or indeed in the United States, and for twenty years previous to such association Dr. Foote, Sr., had occupied the field alone and established the reputation of this widely known concern. If it should ever happen that a branch office is opened in Chicago, on the Pacific coast, in Europe, or elsewhere, it will be well authenticated, and no offence will be taken, if the establishment be genuine, to the most searching investigation of its relations to the home office. Unless abundant proof be offered, it may be considered a "fake" concern, like those which have already been exposed. In our New York office all difficult or supposed incurable cases have the advantage, as already remarked, of a council of physicians, and all owners of this book can have the benefit of their professional advice without money and without price. Simply the investment of a postage-stamp will bring to the reader the matured opinion of expert medical council in any given case at a distance.

Physicians devoted to what is commonly termed "Family practice," are so occupied with the management of acute disease, that they have little patience and less skill if called upon to remove anything more

than the physical ills which confine their patients to their bed or room. Consequently, when a person is out of health and yet able to be about, he imagines he must "grin and bear it," as his family physician fails to prescribe anything which affords more than present relief. If he decides to try skill which is regarded as eminent, he is then liable to fall into the hands of some surgeon who has carved out of the flesh and bones of his fellow-beings, an immortal name. The public fails to discriminate between the qualifications necessary for a successful surgeon, and those requisite for success in medicine. Dr. Knife has performed operations in cutting out tumors; in removing an entire nose, and making a new one; in taking out a portion of the jaw; in taking somebody pretty much all to pieces and putting him together again, etc., etc.; all of which operations have been duly chronicled in the columns of the daily press, and excited the surprise of the multitude. On the other hand, Dr. Herb has actually taken cases pronounced as consumption; others considered as incurable dyspeptics; and still others of women dragging out a miserable existence with female complaints; and these supposed incurables he medicates and advises until they are thoroughly restored, much to the surprise of their friends. The newspapers take no notice of these remarkable cures; and they are known to but the limited circle of those immediately interested. Why? Because a reporter for the press could not be on the spot those long weary weeks or months to witness the growing strength and ultimate triumph. The doctor's story told to the editor, seldom elicits his earnest attention, as he hardly considers the hero of this medical feat a competent witness. If he takes the pains to inquire about the matter in the neighborhood, it is quite likely some envious resident physician will "put a flea in his ear;" Pooh! Pooh! at the whole thing; and gravely declare that the invalid was in a fair way to recover before Dr. Herb was employed. So, Mr. Editor thinks it is quite as safe to say nothing about the matter. Thus, in this little illustration it will be seen how easily an expert surgeon can build up a great reputation by a few important operations, and how slowly the skillful man of medicine rises by a gradual extension of a knowledge of his ability; and even at the apex of his success, he has not attained that celebrity which the surgeon acquired by the extraordinary stories of his surgical feats, published, as they were, in widely circulating journals on both sides of the Atlantic. This country has produced surgeons who have a world-wide celebrity, and justly so; but whose medical attainments, or, at least, triumphs in *medicine*, have been less marked than those of some obscure village doctors. Indeed, I could name two or three who are as well known in Europe as in America, having performed operations that made their names famous, but whose advice I would not accept in any case of disease, acute or chronic, requiring the administration of medicine. I would

stone dead or physically infirm. If the latter, then chronic disease has succeeded the acute attack. Through improper habits of living, impurities may creep into the blood, and infirmities take possession of the system as quietly as filibusters sometimes creep one by one into a country, and peacefully revolutionize it. The filibusters become too powerful to be resisted, before the native inhabitants are apprised of their presence. So the seeds of chronic disease may stealthily and steadily gather in the system until they become too formidable for the recuperative powers of Nature to resist, when, as one patient remarked to me, "Disease became my normal condition." Or, a person may be born diseased, in which case the recuperative powers from birth were bound as with cords. In either case, whether disease has quietly taken possession of the system, or been handed down from generation to generation, Nature may in time sufficiently rally to make an attack, and then comes the keen struggle, called acute disease, just as when disease is acting on the offensive. This is an important combat, and when the smoke of battle clears away, the patient may find that he has recovered or attained to a condition of health; if not, he relapses into his former condition of lingering infirmity, and his disease is called chronic.

Acute disease may precede and usher in the chronic form. Without any symptom of warning, the victim may be prostrated with contagion, poison, or fever. In this case disease comes with banners and trumpets, and a fierce conflict ensues between the bold enemy and the vis medicatrix nature. Friends watch anxiously at the bedside; the countenance of the attending physician is studied for encouragement; unnecessary work is suspended to attend to the sufferer; all is excitement and anxiety as when a fierce battle is raging between your own armies and those of an enemy. The day and night pass. The sun glimmers through the lattice-windows, and rests upon the face of the sick man. Is Nature coping successfully with the enemy? If so, the patient will in a few days or weeks be restored to his wonted health. If Nature's powers waver, the enemy triumphs, and the victim is either slain or released from his bed on parole. If the latter, the patient bears about with him what may properly be termed a chronic disease.

Let it not be inferred from what has been said, that chronic disease can be cured only by bringing on what the hydropathists call a "Crisis." The predisposing or perpetuating causes may be gradually overcome without precipitating a struggle such as is presented in the conflict between nature and disease, just as chronic disease is sometimes acquired by the gradual ingathering of blood impurities and nervous derangements. This gradual revolution of the system may be reversed in favor of health, and although it will not be possible in all cases to avoid a crisis, it had better be averted if possible, even though the patient pursue treatment longer.

### Various Kinds and Signs of Chronic Disease.

In writing of the symptoms, natural cause, and treatment of the various chronic diseases with which I have become familiar through many years of observation, it will of course be convenient to adopt some system, arrangement, or classification; but the more one knows of chronic diseases, their relations to each other and their complications, the more he is puzzled to decide upon any one classification as *the best*, most natural or convenient. Some makers of books of "household medicine" have, no doubt for the sake of easy reference (since there can be no other good reason), adopted the alphabetical arrangement of a dictionary or encyclopædia, and this suffices for a mere recital of symptoms to aid diagnosis and of suggestions for management; but it is the poorest possible way to convey to the reader any real comprehension of the *nature* of the diseased processes going on, such as is necessary to enable him to appreciate the wise course to follow in order to combat them and obtain relief.

Of course a disease cannot be properly classified for consideration until it is well enough understood to give it a *distinctive* name, and it may as well be admitted right here that this is not always easy. To begin at the beginning, what is disease? Health or wholeness means the presence of all normal parts of a living organism, and these all acting harmoniously for its well-being. Herbert Spencer defines life as a constant adjustment of the interior relations (of a living thing) to its external relations (or the things about it). Natural adjustment of all parts within and without results in a healthful or comfortable status, which is normal life. When this delicate adjustment fails, for any cause, disease, often discomfort, results. Yet there are many trifling ailments or disorders which are of too little importance to be named or classified among diseases, and there are the failings and enfeeblements of even "a good old age" which Charcot speaks of as "normal disease."

Many an external blemish (as a mole on the face) or deformity (as bow-legs) may exist without actual impairment of health, and it is equally true that all men are not anatomically just alike in their internal make-up of muscles, bones, and blood-vessels. There are many possible variations or anomalies within normal limits, and even the man with his heart on the right side and his liver on the left, may suffer no inconvenience from this extremely rare variation (we doubt that it should be called *ab-normal*, since it is normal to him, and not a defect). It is no doubt equally true that all normal vital organs do not carry on their functions in exactly the same way. There are wide differences of lung-power, within healthful limits, and even greater



defective action of the kidneys, and the proper, as well as efficient remedy will be a diuretic, and perhaps a cathartic, too. If it be a bilious sick-headache, with nausea—an all over sort of headache—the sooner the bowels and stomach are washed down and cleaned out, the quicker the relief. The above brief facts about headache show how foolish it would be to write of headache as a disease under a heading “*Diseases of the Head*,” or even to include headaches under nervous affections. The most pressing symptom is no doubt the pain or ache in nerves of the head or about the brain, but the differences between a symptom and a disease must not be forgotten, and the search for the disease or disorder of function which causes the headache, is the first step in aiming to select the right remedy.

Pains and aches located in other parts of the body are apt to be deceptive, and easily lead the inexperienced to locate them falsely. Many a pain thought to be in the heart is only a stomach ache, and most of the pains that the subject refers to the kidneys are really in the *tenderloin* muscles of the back, while many a so-called backache is but reflected from the womb. Pains down the thighs, as well as top-head aches and some back-neck aches, may also be due to congested or misplaced uterus. Pains in the eyes or weakness of sight is often merely a “reflex” of sexual irritation or weakness, and many other symptoms could be named which seem to locate the disease where it does not really exist. If headache be due to eye-strain, as often happens, no relief will be had by offering remedies for the other forms of headache already mentioned; the sure remedy is to adjust glasses to correct the fault in the eyes and help them to do their work without strain.

Many a chronic complaint is based upon some persistently annoying symptom that is hardly enough to make a diagnosis of disease upon, and yet may be so troublesome as to be harder to bear than some diseases that endanger life; as, for instance, the temporary itching of hives caused by an occasional over-acid state of the system, or the nagging, continuous pruritis (itching) which may be the only active evidence of a gouty diathesis, or of some more obscure and indeterminate disorder. Anal pruritis, that almost drives the subject wild, may yield to no other treatment than the discontinuance of the use of coffee; and coffee-poisoning or coffee idiosyncrasy would be about the only appropriate name for the state of disease the patient was suffering from.

Those seeking advice concerning some obstinate chronic affliction must not expect that the physician can always find an appropriate and clear name for the disease, and, on the other hand, if several physicians seem to make differing diagnoses they must not jump at the conclusion that one or more of them must be in error. The same case might be called catarrh by one physician, dyspepsia by another, *anæmia* by a

third, and neurasthenia by a fourth, *and all be correct*, as far as they expressed their opinions. One might hesitate to oppress his consultant by naming the full list of his diseased states, another would be content to name the dominant, leading or most important fault, while the third might prefer in his diagnosis to use the name which to him summed up the greatest number of existing symptoms and disorders. Some invalids are so thoroughly diseased that no physician could be content with a diagnosis made up of less than a dozen names if expected to tell all, and yet were such a case to die it might often puzzle him to find a better cause to enter in the death certificate than time-worn "heart failure," or general exhaustion—which after all only means "the man died."

For the vital statistics or records kept by official health boards it is of course necessary to have a definite nomenclature and classification of all causes of death, direct and indirect, and civilized countries are aiming to adopt a conventional classification which will be helpful to all who study such records for comparison of facts concerning the diseases that affect mankind everywhere, but as this book will be limited to chronic diseases not generally directly or necessarily fatal, and as it will include some that do not figure at all in vital statistics as officially recorded, the order in which they will be considered will be entirely one of our own choosing, adjusted for the writer's convenience and the reader's easy understanding. If any reader personally interested because of chronic symptoms of his own, fails to find them all duly presented in any one chapter, he will please remember what has been already said of the possibility of the coexistence of diseases, or a complication of numerous disorders, and it may therefore happen that he or she will find matters of special interest here and there scattered through several chapters.

### The Personal Equation.

It is often necessary to bear in mind that the significance and importance of similar symptoms may be different in different persons. A disease does not always present the same "train of symptoms" in ever two members of one family, and the status, constitution, idiosyncrasy, or predisposition of each individual is largely accountable for the way in which a disease takes hold and makes itself manifest.

This fact of a personal factor has to be considered both in diagnosis and treatment. It is always to some extent a matter of heredity, for each of us is born, not like Holmes's imaginary "one hoss shay," equally strong and durable in all its parts, but with a proneness to weakness, or to give out, in some part sooner than others. We have our susceptibilities to disease as well as to climates, foods, and poisons. One man's food may be another's poison, and there is a marked differ-

ence in the reaction of various constitutions and temperaments to drugs, as well as their influences for good or ill.

The personal factor or susceptibility, that quality in which we are different from other folks, and peculiar to ourselves, is not wholly a matter of heredity. It varies and changes with our habits, course of life, accidents and diseases. Through heredity one person may be liable to catarrhal diseases, another to spasmodic and another to inflammatory symptoms. Many inherit, either with or without a family estate, what is termed the gouty diathesis, which simply means that state of blood and nerves which renders one more liable to gouty forms of disease than to other equally undesirable heritages. Others get by inheritance a predisposition to "go into consumption," or become insane, epileptic, or cancerous; but in addition to such "bred in the bone" tendencies, we all receive from time to time the impress and influences of the climate we live in, the sort of lives we live, and the diseases we suffer. One who has lived long enough in a malarial region to receive the impress of its influence will give proof of it when smitten with some other disease, even if residing in a healthier locality. When the influenza or grip makes its periodical appearance it has three distinct methods of gripping its victims, and whether it take hold and disturb mainly the nerves, the mucous membranes, or the abdominal parts, no doubt largely depends on the weak points of the subject himself, but for a long time after an attack of grip, the same person, whenever suffering from any form of disease, is liable to be reminded of his last attack of grip by the course and symptoms of his later disease.

As to the effects of mode of life it will suffice to illustrate this point by mentioning the "neurotic diathesis," or that state of nervous instability which so often becomes the lot and portion of the well-to-do classes who are addicted to excesses of work and play—the so-called victims of over-civilization, "high life," "fast life," "high pressure city life," etc. A peculiarity liable to grow on such persons is the lack of nerve to bear the ills they have, a disposition to make over-much of their pains and penalties, and to escape their due punishment by resort to narcotics, hypnotics, and anæsthetizing drugs. Thus they acquire still greater constitutional peculiarity, for which we know no better term than neuroticism. The physiological objections to this kind of drugging have been well stated by Professor D. S. Jordan, in an article in the *Popular Science Monthly*, as follows: "The healthy mind stands in clear and normal relations with Nature. It feels pain as pain. It feels action as pleasure. The drug which conceals pain or gives false pleasure when pleasure does not exist, forces a lie upon the nervous system. The drug which disposes to reverie rather than to work, which makes us feel well when we are not well, destroys the sanity of life. All stimulants, narcotics, tonics which affect the nervous system

in whatever way, reduce the truthfulness of sensation, thought, and action. Toward insanity all such influences lead; and their effect, slight though it be, is of the same nature as mania. The man who would see clearly, think truthfully, and act effectively, must avoid them all. Emergency aside, he cannot safely force upon his nervous system even the smallest falsehood. And here lies the one great unanswerable argument for total abstinence; not abstinence from alcohol alone, but from all nerve-poisons and emotional excesses."

Besides the above mentioned individual peculiarities, resulting from heredity, habits, and diseases, there are others to be reckoned as part of "the personal equation," when figuring out the significance of symptoms of disease. There are influences depending upon race, education, religious belief, and mental and moral make-up. Some are so constituted as to fight disease as valiantly as they do all other vicissitudes of life and fortune, while others let go too soon, fall at the first fire of the enemy, and make feeble resistance. In fighting disease, as in any other battle of life, where there is a will there may be a way to win, but without the will, and the hope and faith which naturally go with it, the disease, even though not necessarily fatal, is likely to be so. In

reckoning the influence of the mental state in aiding a patient to maintain a hold on life, the wish to live counts for much. If one's experiences and education have developed the mental habitude of pessimism, and a large doubt whether life is worth living, disease has in him an easy victim. Optimism, hope, faith, will, and cheerfulness are the life-saving corps.

Writing on "The Physiological Effect of Faith" in *The Outlook* (August 19, 1899), Dr. George E. Gorham well shows that the benefits of faith and hope are clearly natural; that is, based on what we know

FIG. 123.



THE OCTOPUS OF EVIL HABITS AND VICTIMS OF "HIGH LIFE."

of human physiology, and so do not require any magical or supernatural explanation.

"If one can accept what the study of the processes of the body seems to prove, that the sympathetic nervous system and its functional activities—that is, the making and repairing of the body—are so bound to the conscious life that they respond to fear and faith in a far greater degree than we have thought, and that the release of fear and the stimulating effect of faith so improve the working of the manufacturing plant of the body that cures are the result, we then have a principle which will aid in the solution of the whole problem of faith-cures. From a physiological standpoint one must say that he who is cured by faith has simply complied with one of the fixed laws of the body. This law is universal, regardless of the soundness of the faith.

"The unconscious processes respond to faith as they do to fear, *blindly*. It makes no difference to them what one believes, only so he believes it strongly enough to produce deep feeling. The physical and mental changes wrought in our bodies through substituting faith; a faith that amounts to genuine expectancy, leaving no shadow of fear or doubt; substituting such a faith for anxious thought, often produces the most salutary effect. \* \* \* Suppose one comes into the presence of a sympathizing friend who excites all the ennobling emotions of love, trust, hope, and courage. None of the crippling effect of fear is in the body, but the whole life is stimulated by the faith and trust one has in the friend. Thoughts come quickly and freely. The body is at ease and its functions go on steadily and well.

"The unconscious processes of the body are only doing their best when they feel the throb of a great faith, a great hope, love, and courage. \* \* \* From these observations we have come to the following conclusions: First, That cures are made under all systems of faith-healing, cures of many functional and some organic diseases, which often have resisted for a long time all regular methods of treatment. Second, That in no single instance is a cure made which may not be made by an improved condition of the unconscious processes of the body, resulting from the elimination of anxious thought and the substitution of a deep faith and trust. Third, That the power which works the cure comes in all cases from these improved physical operations of the body, and not in any magical way from the object of the faith."

#### Functional and Organic.

While treating of matters relating to disease in general, it may be well to explain what is meant in speaking of one as functional and another as organic.

The processes of life are carried on mainly in the vital organs, and each organ has its use, business, or function. If there is merely a disorder of function, without probable or discoverable change in the substance of the organ itself, the disease is functional, whereas, if the substance of the organ is impaired there is said to be a lesion, and the disease is organic. In asthma there may be nothing more than temporary spasm of the air-tubes, obstructing breathing, and it is functional, while in consumption of the lungs the tissue is in time destroyed by organic disease. In bronchitis, a catarrhal inflammation of the air-tubes, it is not so easy to say whether it is functional or organic. If the congestion of the membranes can be relieved and the breathing apparatus again made normal, it would do to call it functional, though for a time there was material obstruction, but if the trouble be due to some incurable cause, so that the inflammatory congestion continues, then there is organic disease. Yet, it would not be true to say that all curable diseases are functional, or all incurable ones organic, nor to reverse these statements. An organic disease with considerable lesion, as a consolidated part of lung-tissue, may cease as an active disease, and the case be practically cured with a defective spot. On the other hand, a chronic "functional" disease, that obstinately refuses to be cured year after year, as seems true of a few cases of asthma, may after all be caused by some undiscovered lesion, not in the lung-tissues, but in one of the many nervous ganglia that control the action of the lungs. It is a fair inference that in most of the functional diseases of vital organs the first fault and continuing seat of disorder is in the operation of that great sympathetic nervous system which controls and operates these organs: in health systematically and harmoniously; in disease more or less otherwise.

I shall find a more fitting place to take up this question later, in the concluding chapters upon nervous and blood diseases. I shall first endeavor to make as clear as possible to the average reader the nature, course, and treatment of these particular diseases, which can be more or less definitely specified by name, and described as to locality according to the parts or regions of the body most subject to their operation. I shall begin with diseases of the air-passages or breathing apparatus, then take up those of the nutritive and eliminative organs, later the sexual or procreative system, and conclude with general consideration of nervous and blood diseases.



## CHAPTER II.

### CHRONIC DISEASES OF THE BREATHING ORGANS.



**B**EFORE entering upon an investigation of the causes, nature, and management of affections which should be considered under this head, let us stop for a moment and observe the importance of the organs with which we breathe. Every living thing has to have air to enable it to exist. Even the plants and

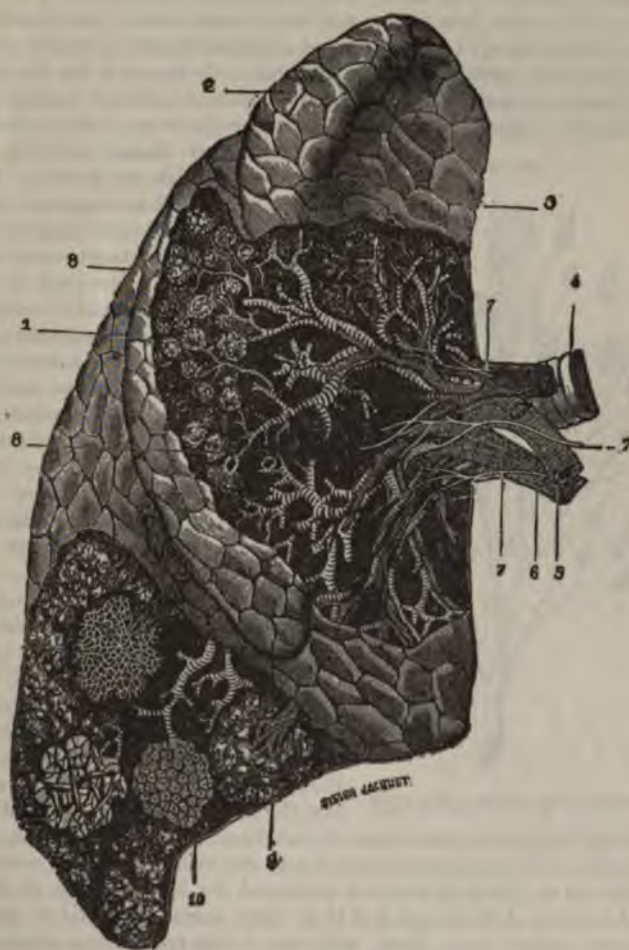
trees have lungs; but by a strange provision of nature, they are enabled, in cold climates, to do without them during the winter. (It would be a happy arrangement for consumptive people if they could do so, too.) The foliage constitutes the lungs of vegetation, and if a tree be girdled so as to prevent the sap (blood) from passing up through its branches (bronchial tubes) to the leaves (lungs), it will perish. By this plan of girdling, a woodman may strangle a forest of oak as easily as an orchard of apple-trees. In Fig. 125 we have a representation of the respiratory system of a tree, and in Fig. 126 a representation of the breathing passages of the human system.

By this comparison we find them quite analogous; but if we dissect the two we shall at once be struck with the greater completeness of the respiratory organs which appertain to animal life.

The minutest insect must breathe or die. Corked in a bottle, or otherwise confined, the tiny gnat, as well as the noisy bee, will die so soon as the vitalizing properties of the air in the confined vessel are consumed. Fishes must breathe or cease to swim. Their lungs are so wonderfully formed, and fringed by what are called their gills, that they separate the air from the water; and while the water passes into their mouths and through their gills, they receive the life-giving properties of air. When taken out of the water they live until the slimy secretions of their delicate breathing apparatus become gluey, and then, as one by one the air-passages are sealed up, respiration becomes more and more difficult, until the function of breathing ceases



FIG. 134.



DIAGRAMMATIC ILLUSTRATION OF THE LUNG AND ITS STRUCTURE.

Outward appearance and internal structure of the lung. 2, 3, outer surface, 4, great bronchial tube; 5, artery; 6, vein; 7, nerve; 8, lobules; 9, magnified lobules; 10, air-sacs in a lobule. A diagrammatic picture, of course.

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altogether. It is not impossible that human ingenuity may some time invent something that will perform the peculiar function of the gills, so that the appliance attached to the head and shoulders of a human being will enable him to live for hours under water; but it will be time better employed for the present to devise means to enable all to breathe above water. Many are troubled to do this, and die for want of breath, when all other but the respiratory organs are unimpaired. A majority of the doctors, and all the surgeons, seem to rather hasten

FIG. 125.



RESPIRATORY SYSTEM OF A TREE.

through the filtering membranes to the throat and bronchial tubes, and is by these latter organs conducted into the little cells called vesicles, which are so numerous that it is computed the lungs contain six hundred millions of them, and that their entire surface is equal to fifteen hundred square feet! Here, with only a thin transparent membrane intervening, it comes in contact with the venous blood. This venous blood has traversed the whole system, and gathered up the useless gases to be respired. Quickly as the touch of strawberry-juice on your clean white collar imparts a stain of red, the dark carbonaceous blood is changed to a rich arterial complexion, and then goes on its way to dis-

than to arrest disease affecting the organs with which we breathe. One eminent surgeon has remarked that, "Consumptives are not subjects for medical treatment, except when it is necessary to smooth the path to the grave." This is honest, and it would be well if all surgeons and physicians in family practice would make haste and come to the same conclusion, and act consistently therewith. The public are slowly discovering that to obtain relief from this class of affections, they must go out of the "Regular Practice," and employ the services of somebody who gives special attention to what are termed chronic diseases.

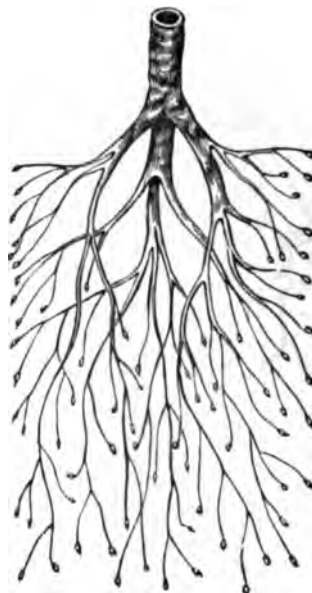
The breathing passages of the human body begin at the nose, where the air should in all cases be received, in order that it may be filtered of dust, and warmed by its passage through the spongy mass of animal fibre which intervenes between the nasal cavities and the vesicles of the lungs. On entering the nostrils, the air passes down

tribute the valuable properties it has derived from its commercial visit to one of the great physiological marts. The blood, indeed, carries on a regular trade between the various organs of the body and atmosphere, the lungs being one of its principal ports. It barter off carbonic-acid gas for oxygen, and although it seems almost like sharp practice, the atmosphere does not seem to realize that it is cheated, but at once makes use of what it receives in its great laboratory, as if it had made a capital exchange; but we would hastily adjudge the gardener a fool who would give a pound of vegetables for a pound of compost! Considering, therefore, the liberal arrangement Nature has made for this unequal exchange, the least we can do is to keep the roads in good order, so that the carbonic-acid gas may be brought without impediment to the place where it may be disposed of on such generous terms. To do this we must keep the breathing passages of the head, throat, bronchia, and lungs in a healthy condition, and the essays given in this chapter will point out the most common difficulties which interfere to prevent this, and present some important suggestions on their prevention and cure.

#### Chronic Catarrh of the Head.

There is no affection of the breathing passages, excepting actual consumption, that more effectually obstructs the action of the respiratory apparatus than chronic catarrh of the head. The purulent mucous secretions which characterize this difficulty, not only block up in many cases the air-passages of the head, but they pass along down into the larynx, run into, and coat the bronchial tubes, and not unfrequently lodge in the air-vesicles of the lungs. Thus obstructed, thus coated, thus filled up, in the act of respiration, the air with difficulty passes the blockade, and when it enters the cells of the lungs it finds them muffled almost to imperviousness; in consequence of which the blood is but partially relieved of its carbonaceous qualities, and is insufficiently vitalized by oxygen. Fig. 127, on next page represents the canal and sinuses, or cavities, in the bones

FIG. 126.

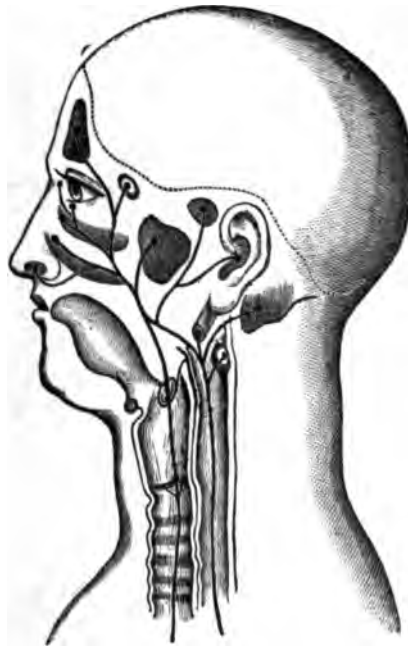


RESPIRATORY SYSTEM OF MAN.

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of the face, in which catarrhal secretions are liable to occur. The dark patches are intended to illustrate the cavities, and the black lines the canals. The latter are not separate and distinct tubes, as might be inferred by the lines made to represent them. The lines are simply designed to trace the course of the smaller cavities which unite the larger ones, and further to illustrate how catarrhal secretions are conducted into the respiratory organs below, and also how they may reach

FIG. 127.



THE CAVITIES IN THE BONES OF THE FACE  
SUBJECT TO CATARRH.

and affect the ears. This cut beautifully illustrates the parts liable to the affection under consideration, and was designed expressly for this book.

Catarrh is a common complaint. Almost everybody, at times, has a touch of it, while some never know what it is to be free from the distemper. Many people are affected with it who do not mistrust that it is a disease. They imagine that the discharges from the head are but the natural wastes of the mucous membrane. Such persons ought to be informed that the healthy mucous membrane secretes only a sufficiency of mucus to keep it moist or free from uncomfortable dryness, and that when there is a discharge from the nose or an ex-

pectoration of mucus from the throat, there exists a disease of that membrane known by the name of catarrh. This affection in many cases produces no painful symptoms, and presents no evidence of its existence other than the accumulation of phlegm in the breathing passages. In others, it is attended with heaviness and perhaps pain in the base of the forehead; redness of the eyes; dulness of hearing, and ringing in the ears. In more susceptible cases it produces inflammation of the eyes and deafness; or tickling in the throat and cough; or

foul breath and decomposition of the facial bones ; or loss of taste and smell.

The medical profession are about as much befogged in regard to the cause of catarrh as the masses of the people. In the days of Hippocrates it was supposed to be the effete secretions of the brain, which found vent at the nose, eyes, and ears ! When Galen was accounted an authority, it was thought that there was a kind of animal vapor constantly rising in the human system, which on reaching the arch of the skull, gathered there, and, passing through a process of condensation like the steam in the cover of a tea-kettle, drizzled down through the facial orifices ! It was not suspected, until the seventeenth century, that catarrhal matter emanated from the glands of the mucous membrane, and ever since then the doctors have been mainly treating it as if it were simply a local disease ; and it has been a favorite target for all sorts of medical sportsmen to fire at. Some shoot astringent liquids into the nostrils ; others play fine streams of medicated spray into the breathing passages ; another attempts to flank the enemy by throwing dust into his eyes in the form of catarrh snuff ; while still another medical wiseacre thinks he will smoke or steam him out with some newly invented fumes or vapors. It is not to be disputed that some of these inventions may prove valuable as *adjunctives* ; but they should only be so employed, for catarrh is really the result of a diseased state of the blood. It seems to me very easy to account for catarrh, and I will here present a theory which I have never seen promulgated, but which the intelligent reader will, I am confident, regard as common-senseful. Checked perspiration, such as may occur whether a person is conscious of having taken a cold or not, confines within the skin the acidulous and effete vapors which in health pass off in the form of insensible perspiration, or what I have denominated electrical radiation ; and these properties, thrown back upon the blood, cause inflammation, and this inflammation decomposes some of the corpuscles and other solid substances of the blood ; reduces a portion of them to purulent matter, just as the inflammation of a running sore eats away and decomposes the animal fibre about it. As this melting of the solid constituents of the blood proceeds, an outlet must be found for decayed matter, and as it more nearly resembles mucus than any other of the secretions, the mucous glands come to the rescue, and this purulent matter sweats through the mucous membrane as profusely, in some cases, as common perspiration pours through the skin of an excited man on a sultry day. When the checked perspiration, the cold, or influenza, is overcome, and the skin becomes again active, the catarrhal symptoms may possibly disappear without treatment ; but if they do not, one of two conclusions may be fairly deduced : either the blood has been so poisoned by the effete matters thrown back upon it, that it has not recuperative

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power sufficient to remove and break this coating of its solid stomach walls, or even the usual processes performing functions which render it susceptible to attack, and which have become too active to subside without the aid of medicine calculated to calm and purify the vascular fundus. Upon this hypothesis regarding the pathology of catarrh, I have cured cases of the disease of twenty years' standing.

There is however something further to be said about the cause and continuance of colds and catarrhs. Though always due to some check in the normal elimination whereby the humors of the membranes are eliminated to excessive activity it is not always possible to trace the origin of a catarrh to any of the ordinary means of exposure, whereby the action of the pores of the skin is suppressed. Sometimes the start is from an indigestive meal, or an excess of food, a microscope or an ice-cream on top of a big dinner, or the much freezing of ice-water, whereby the digestive processes become disordered and the liver congested or overworked. The elimination through the pores of the skin, constant though generally imperceptible, is no more efficacious and important than the elimination of waste products by means of the bile (from the liver) and the secretions of the glands of the intestines. The inner membrane of the bowels has as many millions of pores as the outer membrane or skin, whose business it is in health to pour a pretty steady current of waste matters into the canal which is the main sewer of the body; and their business may be partially suppressed not only by exposure to cold on the outside, but also by too much cold drinks or indigestible, or by depressing emotions, fear, anger, etc. A stuffed feeling in the nostrils, and troublesome excess of watery secretion soon after eating is a common symptom of indigestion, especially of hyperacidity, and when such a stomach disorder becomes a sort of "steady diet" or regular thing, then a chronic nasal catarrh is likely to be added as a continued performance; and so many a chronic catarrh, whether of the nose, throat, bronchial tubes, mouth or elsewhere, is just as chronic and obstinate as the disorder of digestive functions which is really its backer, and yields only when such course of treatment and habits of life have been adopted as will successfully restore the stomach, liver, and bowels to a clean state and healthful activity.

Whenever a case of catarrh outlasts the cold which precipitated it, the difficulty may reasonably be called chronic, and it will be found upon examination with the speculum that the mucous membrane appears blanched and thickened, with here and there raw and inflamed patches. The secretion by this time is either thick and gluey, so as to coat over the delicate lining of the breathing passages below, or possessed of less consistency and greater acrimony, so that it scalds and inflames the membrane over which it passes. In all cases of a consumptive diathesis, either of these conditions is threatening, and will lead to



serious lung complications unless timely arrested. In other cases of different idiosyncrasy, it may confine its operations so much to the sinuses and the organs of special sense, that deafness, blindness, loss of smell and taste may be the results—one or all—of its progress. Or it may limit its action entirely to the breathing passages of the head, causing simply bad breath and unwholesome expectoration. In no case, however, can the full benefit of the function of respiration be obtained while catarrh in any form exists. When nasal respiration is cut off there is a noticeable diminution in the air-supply to the lungs, and, as can be readily ascertained by listening, to the chest of one who alternately breathes

through the mouth and the nose. The nose is the proper organ to breathe through, not the mouth; and the evil effects of mouth-breathing are many; but with the nostrils blockaded by swollen membranes, mouth-breathing becomes the only other way. Occasional allusion has been made to this subject by medical writers, but the first to draw definite attention to the serious results of mouth-breathing was George Catlin, the famous American traveler, whose accuracy of observation, on this subject, for a non-medical man, was quite remarkable. Catlin observed the practice of mouth-breathing to be "the most destructive of all habits," and applied to it the classical but significant name of "malo-inferno," and remarked: "If I were to endeavor to bequeath to posterity the most important motto which human language can convey, it should be in three words: *Shut your mouth.*"

If catarrh does not absolutely stop up the air-passages of the head, it vitiates every breath of air the person inhales; for in its mildest form the viscid matter is corrupt and imparts a taint to the air which comes in contact with it. Then, just to the extent that it spreads itself over and coats the membrane lining, the bronchial tubes and air-vesicles, it renders these organs less capable of performing their work of vitalizing the blood. So it will be seen that catarrh is self-supporting when once established in the head; for while it is perpetuated by impure blood, it

FIG. 128.



THE NOSTRILS AS SEEN FROM BEHIND—BY A MIRROR IN THE THROAT—WHEN THE MEMBRANES ARE PUFFED UP WITH CATARRHAL INFLAMMATION AND BREATHING IS IMPEDED.





remarks were made: "We have found it to be highly probable that most catarrhs are due to a specific infection, and they often depend upon contagion spreading from man to man. This doctrine has very important bearings upon medical practice. It leads us to believe that the means by which we may prevent catarrh are to be found in ventilation and cleanliness, if, indeed, ventilation be not a kind of cleanliness. Experience confirms this belief. When epidemic catarrh prevails, where do we find most of our patients? In those houses which are

FIG. 129.



A POLYPUS TUMOR.

The Tumor, A, being cut away by a wire snare D C, worked through the nose, while the right hand of operator, B, aids by the mouth.

obviously the worst ventilated, even though they be the spacious houses of the rich. And where do our patients catch their catarrh? Either in houses of the kind which I have mentioned, or in buildings where men most do congregate, especially in offices, shops, and churches. Large shops and stores, public museums and libraries, are ventilated as little as possible, for fear of their contents being spoilt by smoke and dust. Many churches, both in town and country, are never properly aired for another reason—namely, because their architecture does not admit of it. Those 'rich windows' which exclude the light, do worse than this—they exclude fresh air. The subsidiary and merely ornamental arts, which do no more than please the eye, are studied to the neglect of that far greater art which promotes the happiness and welfare of the whole man—the art of preserving health."

Any fair consideration of the subject of influenza or "La Grippe"—the grip—would make a long story for which space will not be allotted, since this book must have its limits and acute diseases are not within its scope. I will however take space to give one caution as regards treatment. I am convinced that too much is done in the way of trying to repress Nature's distress-signals in the way of resort to phenacetine,

antifebrin, acetanilide, and other such aniline product powders that lower temperature and subdue pain, while far too little is done to aid Nature in restoring full action of the eliminating organs, the only means by which the system can be relieved of its poisons. Most of my experience with grip cases has been in the care of those chronic disorders which remain after the storm and stress of the acute disease has passed. I have seen many a shattered wreck where it was difficult to decide whether the disease or the treatment had done the most harm, and though many are slow to recuperate, I have always succeeded by systemic treatment in effecting full restoration.

A further account of the grip and its sequelæ or after-symptoms, with an account of cure of a remarkable case, may be found in the chapter on Auto-toxæmia in a pamphlet by Dr. Foote, Jr., on "Wonders, Freaks, and Diseases."

### Hay Fever.

Hay fever is a periodical catarrh of the mucous membranes of the head, sometimes also invading the lungs, which can respond to roll-call both in the list of chronic and acute diseases. It is acute enough during the few months of the summer season when it is at work, but as it attacks its victims annually they are certainly chronic sufferers from it. In the first place it is certainly the result of a local irritant, not a microbe, but another sort of germ, for it is attributed to the floating pollen of plants, grasses, or grains, which exert a particularly persistent, pernicious irritation when coming in contact with the air-passages of *some people*; for this disease requires not only the irritant cause, but also a susceptibility. Fortunately comparatively few persons are so constituted that they must suffer whenever such pollen are afloat, for of course in their season all persons must breathe them. The susceptibles must either fly to the sea or to some island or mountain resort where their plague does not abound, or stay at home and weep, sneeze, and suffer until the season is passed. Some local relief of the swollen, tender, and watery membranes of eyes and nose, can be had by soothing ointments, antiseptic washes and vapors of eucalyptol, camphor or carbolic acid, and some think that they get a little relief by quinine, bromides, and iodides. It is evidently a local disease while it lasts, for which local treatment is the main reliance; but its foundation is the *susceptibility*, which means a diathesis or constitutional bias, the something which constitutes the victim's difference from other folks, and this can only be modified by a long course of treatment between the seasons of attack. I have often been able, by "alterative treatment," to remove this susceptibility by practically bringing the patient in line with other folks—thus making him or her like them *immune*.

## NASAL POLYPI.

In all cases of chronic catarrh there is more or less thickening of the membranes, partially obstructing the narrow air-lumen of the nostrils, and at times one side or the other—seldom both at once—becomes occluded, so that, as the child says, "one of my noses won't go." If one side *persistently remains closed*—impassable to air—it is well to invite examination by an expert, who may very likely find a polypus, which is a bag, cyst, or sack of membrane distended with watery mucus, and acting as a tight plug. There may be several such polypi and both nostrils may be entirely closed by them. They are often balloon-shaped, and attached only by a narrow-necked pedicle, which makes it possible to pull them off with forceps, or strangle them off with a loop of wire, as shown in the illustration, Fig. 129. Such operations often require a good deal of skill—to ensnare the polypi—and to prevent re-growth it may be necessary to cauterize the base from which the polypus is removed. These operations are far more troublesome than risky, but the relief afforded is generally very prompt and satisfactory, except that renewed growths may necessitate more operations, not because those taken away have sprouted again, but because new ones sprout from other parts of the membrane in those disposed to such growths. Such a disposition or liability is generally dependent on both constitutional and local conditions that can be removed by appropriate treatment.

FIG. 129.



THE DISEASED THROAT.

## Chronic Affections of the Throat.

Now let us take a peep into the throat. Bring a spoon or something with which to hold the tongue down. We are supposed to have a patient affected with throat difficulties, as represented in the above cut.

You see those spongy-looking bodies on either side of the orifice leading to the throat? They are the tonsils, which in some cases become so inflamed and swollen as almost to obliterate the passage. By pressing them, instead of sending out a transparent mucous fluid as they do in health, a thick, white, green, or yellow matter issues from them. They are enlarged, and your doctor may advise you to have them clipped off a little, but I would discountenance haste in this

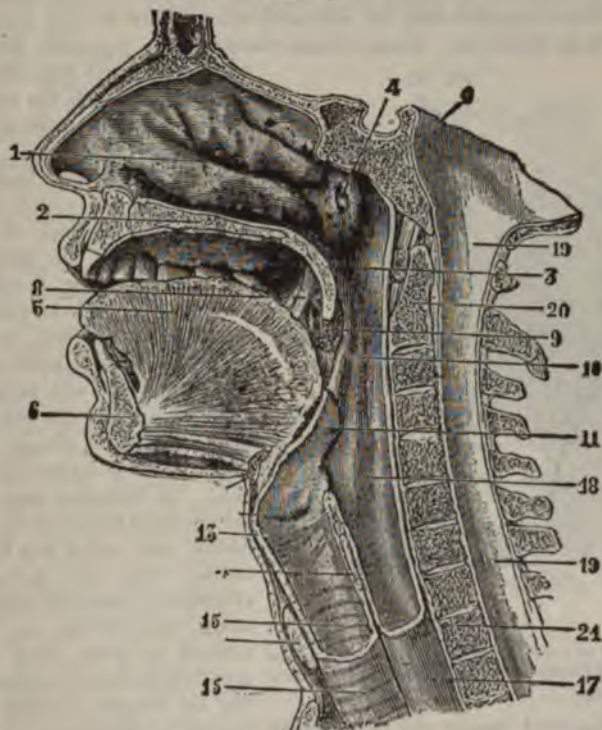
emergency. An operation of this kind should not be performed unless other means have failed. Generally, medicine will cure them. That little round pendulous thing that hangs down between the tonsils is the uvula. That, too, in some cases, is inflamed and unduly elongated—so much so, that when the mouth is closed it will rest upon the tongue. It may be thought best to take off a little piece of that; but it is not well to allow any operation of the kind, unless it be too long when no inflammation is present. Sometimes there is what may be called a congenital elongation, in which case only it may be abridged by the surgeon. That arch-like membrane over the entrance to the throat, from the upper central part of which the uvula is suspended, is popularly called the “Soft Palate.” Behind, and below that, the membrane covering the back wall of the throat has a fiery red appearance, with patches of white or yellow matter here and there; or perhaps a few ulcers are interspersed. Your family doctor will want to cauterize the diseased membrane. Do not accept too quickly this advice. It may be well to resort to cauterization in some cases, but the cautery had better be avoided until more gentle means are tried. The application of caustic to the mucous membrane always leaves it in a sensitive condition; and if the blood is overloaded with impurities, the ulceration is absolutely made worse by its application. It acts like a local irritant, and diverts the impurities to the place where it is applied, and its persistent use leaves a dry, scarred membrane.

There are many people who are subject, whenever there is a change of weather, to sore throat. They are said to be *predisposed* to affections of the throat. Why this predisposition? The *immediate* cause is generally known. Some stubborn man “with a big overcoat” in the cars, would keep the window open and our neighbor caught an awful cold. This, in his opinion, was the cause of his difficulty, and, indeed, so it was the *immediate* cause, but if he had escaped this exposure some other would have precipitated the same difficulty, because his system was in a condition to *predispose* him to just such an attack. Perhaps the predisposing cause was hereditary—perhaps it was incurred by impure vaccination to prevent the much-dreaded small-pox—possibly it was contracted in youth by dissipated habits—it may be that the invalid had a scrofulous ancestry; but however this predisposition may have been obtained, it will in all such cases be found to exist in the blood. Consequently, an impure quality of the vascular fluids may be set down as the *predisposing* cause. There are those who constantly carry about with them enlarged and inflamed tonsils, and possibly ulcerated throats. In these cases it will be found on investigation that their troubles arise from syphilitic impurities; or an inherited scrofulous taint; or possibly from contracted scrofulous impurity; but syphilitic or scrofulous blood, one or the other, is the predisposing cause.



When attacks of sore throat are occasional, not constant, but the "same old trouble" frequently renewed by slight causes, or no discoverable cause, the predisposition is often based on the gouty and rheumatic state of the system. This is so closely allied to the catarrhal or scrofulous, that it is not always necessary to make special reference to

FIG. 131.



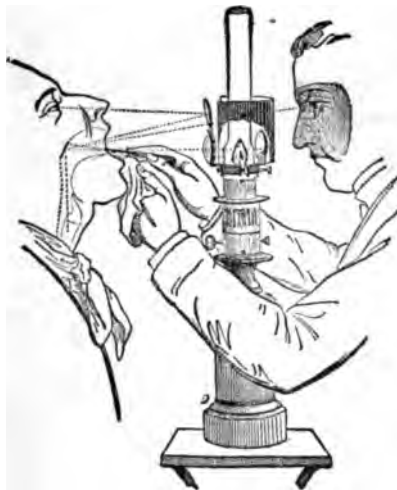
THE NASAL AND THROAT AIR-PASSAGE.

An illustration showing : 1, Nose ; 2, Arch of the Mouth ; 3, Uvula ; 4, Eustachian Tube to Ear ; 5, Tongue ; 6, Jawbone ; 8, Anterior pillar of palate ; 9, Tonsil ; 10, Posterior pillar of palate ; 11, Epiglottis ; 13, Vocal Cords ; 15, Trachea ; 17, Esophagus ; 18, Pharynx ; 19, Canal for Spinal Column ; 20, 21, Bodies of Spine-cut across.

it ; but if one were to write a full chapter on gout and rheumatism their predisposition to worry the throat would deserve no small consideration. Indeed, the person of gouty-rheumatic diathesis may some day notice a tender joint, next a soreness about the rectum, and a day or two later a sore throat. The order of appearance of such symptoms is not always

the same. A headache or skin irritation may be thrown in for variety, but the throat will have its full share of attention from the blood impurities which pester the gouty man. The fact that chronic throat troubles are so generally based upon some constitutional cause shows that the broad-minded specialist who studies the system as a whole, and the relation of all symptoms to each other, is more likely to discover and relieve the cause than the specialist who focuses his eye and his remedy on the throat. Except where there is some tumorous growth

FIG. 132.



LARYNGOSCOPE.

As used to view the vocal cords, showing how both doctor and patient could see the vocal cords.

to remove, local attention to throat affections is the smallest part of the treatment required. That part of the throat which is right back of the mouth, and which connects it with the back of the nose above and the tube to the stomach below, is called the pharynx. It has its membranes well stocked with mucous-secreting glands, and these take part and keep as busy as any of the others, when catarrhal disease attacks the air-passages of the head. In the upper part are the openings that lead to the middle ear, called the Eustachian tubes, and it is by extension of catarrhal disease along these tubes, as fire spreads in grass, that the deep, un-get-at-able parts of the ear become choked up with catarrhal disease and its products, leading to thickening of the delicate vibrating membranes, defective hearing, and deafness. Herein is the origin of 99 of 100 cases of impaired hearing. Below, the pharynx merges into the œsophagus, the tube that conveys food from the mouth to the stomach, and down the same route goes a good deal of catarrhal matter from the back of the nose through the pharynx. This is one way in which catarrh of the head is liable to disorder the stomach. Another opportunity for extension of catarrhal process is from the pharynx into the larynx, which is the voice-box at the top of the trachea or great bronchial tube by which air is conveyed to the lungs. Fig. 131 well illustrates the relations of these parts.

to remove, local attention to throat affections is the smallest part of the treatment required. That part of the throat which is right back of the mouth, and which connects it with the back of the nose above and the tube to the stomach below, is called the pharynx. It has its membranes well stocked with mucous-secreting glands, and these take part and keep as busy as any of the others, when catarrhal disease attacks the air-passages of the head. In the upper part are the openings that lead to the middle ear, called the Eustachian tubes, and it is by extension of catarrhal disease along these tubes, as fire spreads in grass, that the deep, un-get-at-able parts of the ear become choked up



Figure 131 shows how the air-route crosses the food-route. Breathing is constant, eating occasional. When food is swallowed, the epiglottis, No. 11 in the picture, folds down and back over the larynx opening, and the food shoots over it into the stomach-tube (Nos. 18 and 17). If swallowing be too fast, and the epiglottis does not shut tightly, there is a leak of food into the larynx and wind-pipe and a coughing-spell that casts out the offending substance which has "gone down the wrong way."

The next illustrations show how, by means of a reflecting mirror in the back of the throat, well illuminated, a physician can see the vocal cords, and even between them quite a distance down into the lungs. This is very useful when there is disease in the larynx, or when some foreign body like a collar-button has been lodged in the air-passages. The vocal cords are tense bands of membrane that vibrate to produce sound for speaking and singing, but they lose their elasticity and tone in all conditions of debility, so that the tone of the voice is quite an indicator of the state of one's general health or bodily tone, and in most cases of catarrh of the head the voice is impaired.



VOCAL CORDS.

As seen in mirror, held in pharynx.

There is still another affection called laryngitis, or "clergyman's sore throat," which arises from milder impurities of the blood. While clergymen appear more subject to it than other people, it is, nevertheless, a common disease among the members of the legal profession, public singers, school-teachers, lecturers, auctioneers, and those who are obliged to exercise their vocal organs to a considerable extent. In talking, public speaking, and singing, the air expelled, as it always is, with vehemence, has a frictional effect upon the mucous membrane, just as rubbing the finger on the outside produces friction of the skin. This friction produces heat—the heat attracts the humoral properties of the blood—the presence of these produces irritation—irritation induces inflammation, and if the blood is in a scrofulous or syphilitic

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condition the inflammation may cause ulceration. **Laryngitis** is characterized by hoarseness and weakness of voice ; dry cough ; and sometimes with pain and soreness about the throat. Catarrh of the head often so irritates the throat as to invite blood impurities there, and in childhood diphtheria, measles, scarlet fever, colds, etc., are the immediate causes.

Gargles of various kinds are generally resorted to for relief from throat affections ; but they are as insufficient, so far as any permanent relief is concerned, as snuff and vapors are for catarrh. The blood must receive the most attention.

The sufferer from throat troubles, catarrh, or other difficulties, is always tempted to go to work at once locally. He imagines that if he can only bring something of a healing character in contact with those irritated or ulcerated surfaces, he can overcome the evil ; and after having tried all sorts of local panaceas, he is too liable to conclude that his difficulty is incurable, and that he must go through life with it ; but in nearly all cases when the faith of this class of patients can be sufficiently established to enable them to go patiently at work in the use of remedies, skilfully prepared, to act upon constitutional or predisposing causes, they are agreeably surprised to find that this class of difficulties may be disposed of permanently with comparatively little trouble. The faithless are commended to a perusal of Chapter XII in this part.

#### **Chronic Bronchitis.**

Here is a disease which often proves obstinate in the hands of those physicians who have had limited experience in its treatment, and those who so imperfectly comprehend its nature and origin as to resort to little else than inhalants and expectorants. In this, as in diseases of the head and throat, the predisposing cause is apt to be overlooked. Bronchitis has its root in an impure condition of the blood. Some imprudence or unavoidable exposure may have brought on the difficulty, but if it does not pass off readily with the cold which ushered it in, doubt should not exist for a moment that the blood of the patient is mainly at fault. When this disease first makes its appearance, it usually presents the acute form, and is attended with a dry cough, showing a preponderance of the positive fluids ; but when it becomes chronic, excessive expectoration ensues, evincing an entire inversion of the disease, and a preponderance of the negative alkaline fluids.

Unless checked or cured in season, bronchitis not unfrequently leads to diseases of the lungs. As will be observed in Fig. 134, the bronchial tubes are extensively distributed in the lungs for the purpose of conducting the air to the vesicles, and when inflammation exists in the former, it is very easy for it to extend to the latter. Every person has doubtless noticed how inflammation in the finger or hand, produced

by soreness or accidental causes, will frequently communicate to the arm, and gradually extend toward the shoulder until the whole arm becomes affected. Now the bronchial tubes are as closely allied to the lungs as the hand to the arm, and the inflammation affecting one, will very soon affect both, unless timely attended to.

Bronchitis is often mistaken for consumption. It sometimes presents all the symptoms of lung disease; so much so, that physicians not

FIG. 134.



WIND-PIPE OR BRONCHUS AND BRONCHIAL TUBES, AND THEIR RAMIFICATIONS IN THE LUNGS, SHOWING THEIR INTIMATE RELATIONS WITH BLOOD-VESSELS FROM THE HEART.

familiar with pulmonary diseases diagnose it incorrectly, much to the discomfort of the patient. There is one rule, however, which in most cases is reliable for non-professionals to go by. Invalids affected with bronchitis are apt to be easily discouraged, and at times depressed, while the consumptive is almost always hopeful. The hopefulness of consumptive patients is proverbial—they are seldom disposed to believe that they have the disease, while those affected with throat or bronchial affections are nearly always apprehensive, hypochondriacal, and disposed to imagine themselves the victims of consumption.

Persons affected with bronchitis should, as much as possible, avoid coughing. It is sometimes difficult to do so, but coughing tends to extend the disease. It is a kind of involuntary effort of nature to ease the irritation. All persons who have ever had an itching eruption of the skin, know how natural it is to scratch. People will scratch when they do not think of it. In this case it seems to be an involuntary movement to ease the irritation, but it generally makes it worse, and the humor and redness of the cuticle spread over more surface in consequence of it. The same in coughing: the mucous membrane, instead of the surface skin, being irritable, and the seat of annoyance being unapproachable with the hands or fingers, a sudden discharge of air from the lungs is resorted to, the friction of which administers temporary relief, but as certainly increases the latitude of the disease. For this reason coughing should be controlled so far as practicable, and bronchitis should not be neglected. It is consumption in embryo, and many times as obstinate to cure as a deeply seated pulmonary disease.

There is no one habit better calculated to bring on bronchitis and to perpetuate it than the habit of bundling up the throat. By this practice the throat is rendered tender and sensitive and susceptible to colds on the slightest exposure. My personal experience in this connection may be interesting. When a boy I was constantly afflicted with this disease, and falling into the error that most people do who are troubled with the complaint, I never stepped out of doors without winding a great woollen comforter two or three times around my neck. One doctor after another was applied to—one dosing me with calomel; another advising the application of gargles; and another swabbing my throat with nitrate of silver, until I was nearly doctored into my grave. As I became older, and began to exercise my own judgment, I resorted to simpler remedies of my own invention, with partial relief, still continuing, however, the injurious practice of enveloping my neck in woollen; but at the age of about fourteen I determined to make my neck tough like my face, and not only throw off the neck-dressing customary in cold weather, but also the cravat, and turn down my collar on a level with the collar-bone. At once the difficulty was removed, and, by the aid of medication to purify the blood, every vestige of the disease departed. I have so far back-slidden as to resume the necktie, but in no case is it my habit to wear fur, tippet, or other extra clothing about the neck in winter. No one in the habit of bundling up his throat can at all times avoid exposure when the neck is not guarded. The atmosphere indoors is sometimes as cold as that outside, and he who envelops his throat to his ears in furs or woollen, on stepping out, must keep them on after returning, or a cold will be the result.

If neckwraps are to be discarded in winter, of course it should be done gradually, and the neck should be bathed every morning in cold

water. Exposed to the air, the neck becomes no more sensitive than the face or hands, and who with any frequency takes cold in the latter?

Let me not, however, be understood to say that the abandonment of neckwraps will effect a cure in cases of bronchitis. The exposure of the neck toughens it, and renders it less liable to attacks of cold, as previously remarked, and in this way victims of bronchitis may be benefited without other treatment.

Cases of bleeding bronchitis sometimes present themselves in an extensive practice. In some of these their difficulty has been mistaken for hemoptysis or bleeding of the lungs. A case of this kind from New England some years ago came under my treatment, and it was generally supposed by his physicians that he was affected with hemorrhage of the pulmonary organs, but I was convinced, after an examination, that the blood proceeded from a certain portion of the bronchia, which I pointed out, and proceeding upon this diagnosis, I cured my patient after he had been given up to die by his doctors at home. The treatment of bronchitis, to be successful, must be about the same as in a case of consumption.

#### Asthma.

Asthma is a word on a Greek basis, meaning "I blow," because its distinctive symptom is difficult breathing, with a wheezing sound. It comes on in periodical attacks. The most common time is about two o'clock in the morning, and the patient, if not aroused by premonitory symptoms of distress through chest and bowels, as many are, may be promptly aroused from slumber, and compelled to assume a sitting attitude, bolstered up by pillows in order to breathe at all. The attack gets worse before it gets better, so that to one unaccustomed to it "it seems as though I would die," and the onlooker is even more liable to think so; but the "old-stager," through long experience, comes to take his nightly turn at it quite philosophically, learning that its persistence is consistent with a long life and a very useful one. The man who built up the *New York Times*, George Jones, was a steady victim till he died at the age of seventy-nine, and Mr. Geo. T. Angell, the active though aged leader of the National and Massachusetts Societies for the Abolition of Cruelty to Animals, finds consolation in the good ideas that come to him in the long and lone vigils of the night when he has to sit up with himself.

In moderate attacks the difficult respiration is the only important symptom, but in severe ones there may be cold extremities and sweating, even vomiting (often, however, induced by the medicines used). After two or three hours of such suffering the spasm relaxes, some mucus is expectorated, and exhaustion leads to a morning nap. For the rest of the twenty-four hours the asthmatic may be quite like other folks, not showing evidence of the disease; but many cases (about

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eighty per cent.) are attended with more or less constant bronchitis or catarrh, and others are dyspeptic. The disease rarely stands distinctly alone, unrelated to other constitutional disorders. It is often founded in a gouty state, and may take turns or alternate with attacks of gout, or of its eczematous skin manifestations (salt-rheum). Acidity of the stomach, heartburn, and other forms of indigestion are frequently observed in asthmatics. Malaria and syphilis have also been found responsible for their torments.

Asthma must, therefore, be generally due to blood humors, and we are reminded how almost impossible it is to write about a chronic disease of any kind without coming back to them as the basic cause; but in asthma the nervous system must also be taken into account, since in many respects it goes hand in hand with what are called neuroses, or derangements of nerve-action. In the actual spasmodic attack the nervous system plays a most important part, for the difficult breathing is very directly due to spasm of the many muscles surrounding the bronchial tubes, partially closing them; and this is due to a stimulus to spasmodic action received from the nerves which control these muscles, so that an attack of asthma is, like a periodical attack of neuralgia or sciatica, due to spasm originating in the nerves; but why a spasm there? because it is excited by properties in the blood which are irritants to the nerves. Thus, asthma becomes clearly a disease due to blood impurities and nervous derangements, and the best line of treatment for cure is clearly indicated, but before saying more of treatment, it will be well to consider the various immediate or external causes that take a hand in stimulating asthmatic attacks.

Many cases suffer their regular attacks whatever their abode or manner of living, but often it is evident that the "touchy" nerves are set off and the spasm brought on by states of the atmosphere, floating dust, plant spores or pollen, the emanations from a feather-bed or from animals. Various odors, as from cooking and perfumes, may act as an exciting cause, and so may errors in diet, bringing on indigestion, or merely mental storms, such as anger or fright. The exciting cause is not always discoverable or necessarily present, but the predisposing causes in the states of the blood and nervous system must be ever present to render such exciting causes operative. Many an asthmatic, though really uncured, may avoid the attacks if he can discover some particular climate suited to him, but what gives comfort to one may do the reverse for another, and not infrequently the smoky and dusty air of cities is less stimulating, and so more bearable than the bracing and clear out-of-town air. Extremes of temperature, and of dryness or moisture in the air, are known to act as exciting causes; and variations in the electrical state of the atmosphere are very likely as influential as they are obscure. Some say heredity can be traced in forty per cent.

The treatment is of two kinds, palliative and curative. When the attack comes on, it is natural to seek immediate relief, even by such nauseous doses as ipecac and lobelia, which help to relax spasm. Indian hemp and chloral are also employed for this purpose, but many get most prompt relief from breathing the stifling fumes of burning stramonium leaves and paper that has been soaked in nitre and dried. Strong coffee is a common resource, and even mustard-plasters to the feet are helpful to some folks on such occasions. The curative treatment is such as is appropriate to removal of causes, to improve the state of the blood, and relieve the irritability of the nerves and their proneness to explosive action. This means the eradication of scrofula, gout, or malaria, if they be in the background. Sometimes there is a nasal obstruction, such as polypus, to be removed. Probably the seeming incurability of some persons is due to the impossibility of repressing their tendency to over-activity. They are full of business, nervous, active, energetic, and perpetually over-tax the nervous system, and keep it continually "unstrung," or below par, so that spasmodic asthma becomes even "natural" to them.

The author has no recollection of ever failing in a case of asthma when the patient was under fifty years of age, while he has been successful in many on the shady side of fifty. The combination of electricity and medicine seems admirably adapted to the requirements of asthmatic patients, and must almost invariably succeed.

### Consumption.

It is almost unnecessary to remark that consumption is the most common and fatal of lung diseases; indeed, it is so common and familiar that we have become hardened to the fact. It is sometimes called the "great white scourge." If any new scourge were to come upon humanity and carry off an equal number of victims in a civilized community, it would arouse terrible apprehension and constant investigation. As the disease is always with us, so the subject is almost always up for discussion somewhere, and many earnest men in all classes are seeking to abate the scourge. Every two or three years some international congress is held to compare notes and strive at least for some mitigation of it. In brief, it may be said that about one in every seven deaths is set down to consumption of the lungs, and the annual tribute of the United States is over 100,000 of its inhabitants. So that when we are a population of 70,000,000, it would seem that about 10,000,000 are doomed to pass away with consumption. Furthermore, the disease is more prevalent than appears from the tabulated tables, as we know from the fact that in many persons who die from other causes, there can be found in the lungs evidence that they have



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had more or less tuberculosis and practically recovered from it, or at least lived to die of something else. So it has been estimated that at least half of the population is, or has been, tuberculosed. Before proceeding farther it may be well to say that all tuberculosis is not consumption, and all consumption of the lungs is not attended with tubercles. But the two names of consumption and tuberculosis are frequently used as interchangeable, because the lungs are the organs most commonly afflicted with tubercles, and because there are very few cases of consumption in which they do not exist.

##### KOCH'S BACILLI.

All the editions of this book during forty years past have given scrofulous impurities as the basis of this disease. During that time the

FIG. 135.



A TYPICAL CASE OF CONSUMPTION.

progress of medical studies has discovered the fact that little microscopic fungi, now generally known as Koch's bacilli, are the tenants of tubercles. At first many were inclined to say that they were the cause of the disease. But now we hear little of that. All authorities agree that they only take root on what is called favorable soil, just as plants in general only take root when the seed falls on favorable ground. Dr. Jacobi rightly says that "the tubercular bacillus never attacks healthy tissue." While all the schools of medicine are nearly unanimous on this point, that there must be a favorable soil; that some are predisposed; that others cannot be touched by it, there are physicians who deny that the bacilli are always present in the disease. One of these, Dr. Gibbs, was for ten years the Professor of Bacteriology at Ann Arbor Medical School. He claims to have conducted hundreds of autopsies of consumption without finding a trace of this tuberculous fungus. If he is right, of course they must be wrong who say "every new case of tuberculosis must be derived from another case by direct or indirect infection." My study of the subject leads me to believe that if every specimen of the fungus could be stamped out by methods proposed, nevertheless people would suffer and die from scrofulous inflammatory, wasting disease of the lungs with the course and symptoms to which we give the name consumption. In general, the function of such minute organisms is to tear down or pull apart dead and depleted

animal tissues. As Jacobi says, healthy tissue is not in their line. But when disease sets in and when the individual becomes susceptible to their depredations, then they take hold and hurry on the destructive processes. Very likely, cases of consumption that reach a fatal termination, would die very much more slowly were it not for the activity of these little busy-bodies. Dr. E. G. Janeway, of New York, is reported as having said at a meeting of the New York Academy of Medicine, May 5, 1893, that some physicians were inclined to go too far in their statements regarding the infection of tuberculosis. He distinctly declared that the soil is more important than the germ, and he finds that the catarrhal tissues of the membranes is one indication of susceptibility, and that those persons who are disposed to develop frequent attacks of catarrhal pneumonia are liable to drift into consumption.

In looking for ways and means to avoid this widely prevalent disease, it would be foolish to ignore the possible powers for evil of the germ. But on the other hand, it is more evident to me that it would be foolish to make light of the conditions that produce the favorable soil. Boards of Health in various cities are laying considerable stress on sanitary means of restriction and prevention, hoping thereby to accomplish something in the way of stamping out the disease. And the mortality records of New York City for 1888 to 1898 seem to show that the death-rate has been reduced from about four per thousand to two and one-half per thousand. It may be fair to attribute at least a part of this to energetic methods for the improvement of the sanitary condition of the city in general, and allow also that the special efforts against the spread of the tubercular material has not been without avail. Yet we agree with Dr. M. L. Holbrook, the veteran hygienist, who believes that more can be accomplished through individual hygiene to maintain such a high standard of personal health that immunity will thus be insured, not only against the consumption germ, but also many other afflictions. I take enough stock in the idea of contagion of consumption to endorse and help give publicity to those sanitary precautions which various Health Boards are urging. It is claimed that the contagion is in the broken-down tubercular tissue, and whether it is cast off in the form of the sputa from the throat or

FIG. 136.

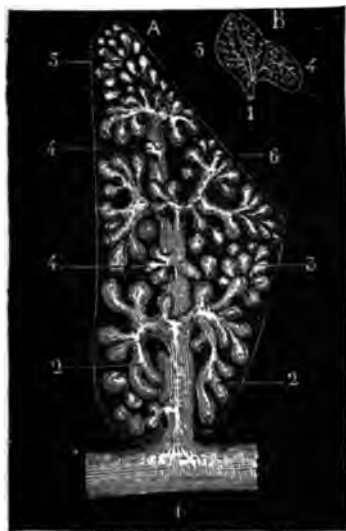


THE FUNGI OR BACILLI OF CONSUMPTION.

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ent system is the route by which the bacilli travel, and that if they escape the destructive powers of the lymphatic glands and succeed in running this long gauntlet, then they pass on through the thoracic duct into the venous blood and are soon pumped through the pulmonary arteries into the delicate blood capillaries of the lungs. Here they lodge and begin business. He thinks it very improbable that the bacilli are drawn so deeply into the air-tubes by the lungs as to reach directly the spot where they set up shop. I think he is correct. All this goes to show that our protection against them lies mainly in maintaining an invulnerable lymphatic or glandular system. Scrofula makes itself evident

FIG. 133.



THE AIR-SACS OF THE LUNGS.

B, a pulmonary lobule, magnified in A, to show terminal air-vesicles, 2, 3, 4, 5, 6, and their relation to the bronchial tube, 1. Phthisis involves these air-sacs.

amined post mortem and pronounced to be free from tuberculosis." Not many years ago these devotees of vaccination were strenuously maintaining that neither consumption nor syphilis were possible risks of vaccination. Now they admit both risks.

Having shown how it is that the disease known as consumption comes about, I will give a little description of what kind of change takes place in the lung-tissue, and then speak of the symptoms that result more or less from that change.

in derangements of this glandular system. In the scrofulous person the germs have an easy access. If the glands are all right, the germs cannot get through without being practically eaten up and destroyed. One of the routes by which tubercle-bacilli gain access to the lymphatics is through vaccination. This is coming to be generally recognized as evidenced by the following resolution adopted at one of the sessions of the International Congress of Hygiene, held at Madrid in the spring of 1898: "Inasmuch as tuberculosis is easily transmitted by vaccination when it is done directly from the calf, this Congress asks that in all the Nations represented at the meeting, the practice should be adopted of using only lymph of calves which have been ex-

Nearly all educated physicians are perfectly acquainted with the disease as it is *locally* presented. One of the best descriptions of tubercle in its incipient and progressive stages is given in the "American Cyclopædia." "In the earliest stages the tubercular matter," remarks the writer, "presents itself in one of two forms: first as small, rounded semi-transparent granulations, of a grayish color, varying in size from a millet-seed to a pea, disseminated throughout the affected portion of the lungs; in the progress of the disease a yellow spot is formed in the centre of the grayish matter, and this gradually increases until the whole becomes of a uniform color; second, the grayish matter is infiltrated into the substance of the lungs in irregular masses; the yellowish points make their appearance in these masses, increase and coalesce, until the whole forms irregularly round bodies, varying in size from a pea to a hen's egg, more or less soft and friable, breaking down like cheese under the pressure of the fingers. After a time these yellow bodies undergo a new transformation; they begin to soften in the centre, and gradually become converted into a thick, yellowish fluid or semi-fluid matter. The abscesses containing this matter are termed *vomicæ*; by degrees their contents find their way into the bronchial tubes, and are expectorated, leaving ragged, irregular cavities in the lungs. These cavities at first are rounded; old cavities are irregular in their form, presenting anfractuosités, and are commonly lined with a dense false membrane, while their walls and the neighboring pulmonary tissue are infiltrated with tubercle. The mucous membrane lining the bronchial tubes, which are connected with old cavities, is almost invariably inflamed and thickened. In a certain number of cases the trachea presents ulcerations varying in size and number; the larynx is more rarely affected, and here the ulcerations are mostly confined to the vocal cords and the epiglottis."

The symptoms of consumption the doctors mainly agree upon. They are, briefly: wasting of the flesh; more or less cough in most cases; shortness of breath; expectoration of matter which falls below the surface of water, or sinks to the bottom, and, in some cases, streaked with blood; growing contraction of the chest; quick pulse; dry heat in the palms of the hands and soles of the feet; flushes at times on the cheeks; gradually increasing debility; and, in advanced stages of the disease, hectic fever; chills; copious expectoration, in some cases with, and in others without blood; night-sweats; eyes sunken and glassy; cheeks hollow; lips compressed; nose pinched in its appearance; complexion bloodless when fever is absent; and, in the last stages, great emaciation; swelling of the extremities; expectoration ash-colored and heavy; relaxation of the bowels; disturbed digestion; and, in many cases, ulceration of the mouth and throat. Some cases pass through all of these stages with little or no cough, or pain in chest; but usually at

the outset there is a hacking cough, which gradually increases as the disease progresses, both in severity and frequency; and weakness, pain, and constriction of the chest are experienced.

This disease often becomes established so insidiously, as I have already said, that it is impossible to learn just when it began. But there are cases which very evidently follow as a sequela of measles or pneumonia. When fairly established there are generally symptoms enough to make diagnosis easy and sure, and if the symptoms of which the patient himself complains are not enough alone, then more can be learned by the physician's method of examining the chest; and the latest in this line is the use of the X-ray. It is seldom necessary to resort to this, but it is rather interesting to know that it often gives evidence of old scars—spots that have been cured—in persons who were never suspected of having the disease. This is of course one more evidence of the curability of consumption. When this book was first written, it was medical heresy to declare consumption curable, but for some years past I have not been alone in this claim.

#### THE CURABILITY OF CONSUMPTION.

The "National Encyclopædia of American Biographies," published by James T. White & Co., in 1893, Vol. III, speaking of the author of "Plain Home Talk," said: "In fact, he has, during his entire professional career, demonstrated the curability of consumption." At present I would not know where to look for a quotation in modern literature to the effect that consumption is always necessarily incurable; of course there still remains a great difference of opinion as to the number of cases that can be cured. In the *Medical Record*, an organ of the old school profession of New York City, in its issue of October, 1898, I find Dr. S. A. Knopf reported as claiming that twenty-eight per cent. might be cured in special Sanitaria in the Adirondacks, and that patients could be taken care of there at less cost than in the public hospitals in New York City. He was arguing that very few cases recover in the general hospital, so that the money spent on them there was virtually thrown away, whereas, if specially provided for in suitable Sanitaria and in favorable regions, one-fourth might be restored to health and business. He remarked that the plan had proved very successful in Germany, where there are fifty Sanitaria for the poor, and that in this country it need not cost more than one dollar per day a man. We find the following in an editorial in the *Medical Record*, presumably by Dr. George F. Shrady: "That pulmonary tuberculosis is curable, or rather that it does not always progress to a fatal termination, has been shown again and again in autopsies where the lungs present unmistakable evidences of having once been the seat of tuberculous lesions. The bacilli have obtained a lodgement at some period and have begun their

ravages, but the organism, aided perhaps by hygienic or medicinal remedies, has proved itself strong enough to destroy the micro-organisms, and repair as far as possible the injury done by them. In this fact the therapist finds encouragement for renewed effort, and upon it he rests his hopes of ultimately triumphing over the scourge of mankind."

Dr. Henry P. Loomis, of New York, says: "After a careful study of the processes which result in the arrest or cure of this form of tuberculosis, that of seven hundred and sixty-three persons dying of non-tubercular disease, seventy-one, or over nine per cent., presented in their lungs changes characteristic of healed tuberculosis, and other observers tell us that their clinical experience and post-mortem examinations prove to their minds that the reaction against these infective microbes is so marked in some constitutions as to even bring about spontaneous cures of tubercular disease without the aid of therapeutic measures."

Dr. Andrew Clark, a celebrated London physician, said to an interviewer:

"Now let me tell you how I myself have managed to live at all. I am sixty-six. Over thirty years ago, when I was a young and obscure Scotch practitioner in London, I applied for a place on the medical staff of the London Hospital. The authorities there said: 'Oh, let us give the poor chap a chance. He is consumptive; he won't last long. Let us, in pity, give him the post.' Well, I have outlived nearly every one of them. All my life I have been delicate; I have several times been at death's door, but by reason of a simple life and a life of work, I have managed to get very close to three-score years and ten."

#### TREATMENT OF CHRONIC DISEASES OF THE BREATHING ORGANS.

In all of these difficulties excepting asthma (and in many cases this affection may be included), the main thing to be accomplished is to purify, enrich, and build up the corpuscles of the blood. In all cases of catarrh, inflammations or ulcerations of the throat, bronchitis, and consumption, the blood, on examination, is found to be inflammatory and impure, or else deficient of red corpuscles, while all the substantial constituents of the blood exhibit a disposition to decay. I am constantly treating, and with gratifying success, invalids affected with the diseases under consideration, as will be observed in some extracts of letters given in Chapter XII. of this Part, and the remedies I employ are such as are calculated to restore the blood to its wonted richness and strength, and impart nervous vitality to the wasted and enervated system.

It is well, however, to give early attention to consumption in its incipient stages. The earlier the better.

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### THE PROFESSION IS COMING TO MY VIEWS OF FORTY YEARS AGO.

The treatment I advise has stood practically as it is in all previous editions of this work. I see no occasion to amend it in spite of the fact that there have been more new cures for consumption offered than for any other disease—and generally after brief trial abandoned. I find the medical profession of all schools coming, in the main, to my point of view. I will quote but one of many available. I find Dr. Porter saying in the *Clinique*: "Without fear of contradiction it may be asserted that tissue-building—the establishing of healthy cell-life—is the foundation treatment of every case of tuberculosis in all stages." The blood is the material from which all tissue-building must draw supplies, and upon the quality of the blood will depend the kind of tissue that is built up. Again I quote from Dr. Porter because he expresses my oft-stated views. "Feeding is not nutrition. The best of diet may not be assimilated—may do harm rather than good. The practice of stuffing, so honestly advocated by some authors not long ago, has been rapidly abandoned. Years ago every case of phthisis got a bottle of cod-liver oil; now it is given only to selected cases. Nutrients are chosen which can be appropriated, and food is given in such a manner and of such kinds as may easily induce complete assimilation.

"There must be a demand for nutrition before assimilation can be satisfactorily performed. There must be the ability to appropriate food that is taken, else the defective cell in a remote part of the system will profit little thereby. Just here, I believe, is an important point in the treatment of tuberculosis. The best of food and the most reliable nutrients are taken and still the waste in many cases goes on. There is either want of assimilation, or a want of gain from the process."

This is simply another way of saying what I have always claimed, that means must be adopted for increasing what may be called in short the in-take and out-put processes of repair and cleansing. The system must be aided to unload all useless and harmful waste matters, and encouraged to take on fresh, wholesome reparative substance. There is in such cases a general disposition to emaciation, attended with a lack of power to absorb fatty matters. For over half a century it has been common to prescribe cod-liver oil to make up for this deficiency, overlooking the fact that the real flaw is the inability of the system to digest and absorb fatty matters. No doubt some of them are more easily assimilated than others, but in general it has been worse than wasting cod-liver oil to try to enforce it upon organs and tissues that would persistently refuse to receive it. At this late day we find Dr. H. A. Hare, in his "Practical Therapeutics," making the following statements: (1.) Never use cod-liver oil when the disease has passed the primary stages of thickening of the lung and roughening of the



respiratory sounds, unless fibroid changes are going on and the changes are very slow indeed. (2.) The use of cod-liver oil when rapid degenerative changes are occurring in the lung is distinctly harmful, as it is not of any service, disorders the digestion, and destroys the appetite.

There is an old-time story of a German who thought his doctor prescribed for him dog-liver oil. He tried it and it helped him. In New Bedford, years ago, when the whaling business was brisk, sperm oil was used in place of, or to adulterate, cod-liver oil. When the digestive processes can be coaxed to call for and make use of easily digested fats, probably good cream and butter are as cheap as any. Without resorting to any obnoxious oils like those just mentioned, any consumptive patient can obtain all the oleaginous matter necessary to supply the waste of his system, by eating those articles of wholesome food like roast and boiled beef, and boiled mutton, while his medication should be such as to deprive his blood of its impurities.

Dyspepsia is a very common companion of diseased lungs, and in such cases cod-liver oil, or even fat meats, are loathsome to the stomach. Dr. Pereira remarks that "fixed oil or fat is more difficult of digestion and more obnoxious to the stomach than any other alimentary principle." "Indeed," adds he, "in some more or less obvious or concealed form, I believe it will be found the offending ingredient in nine-tenths of the dishes which disturb weak stomachs." Here, then, cod-liver oil not only ceases to be a remedy, but becomes an injurious medicine. What are cod-liver oil doctors going to do in such an extremity?

I have a suggestion which may help them out a little. It is to apply the oil externally with the friction of the hand. Any wholesome oil may be employed for this purpose, and the frequency of the application must depend upon the condition of the patient. If he be greatly emaciated, every other day would not be too frequent, but the skin should be well frictionized with the naked hand, and the person making the application should be one in the full vigor of health. Any oily matter remaining after this application may be removed with a dry napkin.

#### KOCH'S SERUM AND OTHER REMEDIES.

It would be useless to attempt to make any list of the great number of cures first heralded as sure, and then abandoned and forgotten. One of the most celebrated was the serum treatment of Koch, the German who discovered the bacilli of consumption and thereby gained a reputation for knowing something which has been largely lost through the failure of his cure. His plan was to make a sort of poison-broth by cultivating the bacilli in fluids wherein they thrived, and then filtering so as to get their poisoned product. It seems a little like trying "the hair of the same dog to cure the bite." The editor of the *Medical*

*Record* says: "In no instance has failure been more conspicuous than in the serum treatment of tuberculosis;" but he concludes his article with an expression of a hope that there will yet be discovered an anti-toxin for tuberculosis which will effectually cure the disease. To my mind this seems as hopeless as the search for an elixir of everlasting youth. The real cure for consumption must be a gradual reversal of the slow process by which it has come about.

One old-school author says: "Writing in the light of many months' world-wide trial of Koch's remedy, I see in the present resources of medicine no means of directly or indirectly destroying the

FIG. 139.



THE OUT-DOOR CURE.

bacillus or of preventing its destructive action save by reinforcing the tissues. Nor do I conceive it within the range of probability that a specific in this disease will ever be discovered. Specific medication in tuberculosis while it may not be irrational is certainly misleading, for it is directed to simply an effect, or a secondary result of a fundamental cause which lies anterior to, or prior to, the invasion of the system by the bacilli."

Solomon Solis-Cohen, Lecturer on Special Therapeutics in the Jefferson Medical College of Philadelphia, who has written an excellent article on tuberculosis, not long since, says, "that the bacillus of Koch, while it is perhaps the most important of several microbes that influence the progress of lesions in the various forms of this disease, does not of itself originate the disease in any form."

Still another writes: "By a careful study of Nature's own efforts in coping with this affection we find that her success lies along the line of physiological resistance of the tissues to the microbe. If she fails, her failure should not be attributed to the destructive effect and infective nature of the bacilli, but to a lack of sufficient vital force to properly maintain the integrity of her own structures, in consequence of which these parasitic agents which float in the air we breathe, and lurk in the food we eat and the liquids we drink, find a suitable lodgement for their growth, a favorable soil where they can live and thrive upon a pabulum furnished them in poorly organized tissue. \* \* \* All measures to keep up vitality and revitalize diseased structures must be foremost in the mind of the therapist, remembering that measures which favor the nutrition of man oppose the nutrition of harmful bacteria. Fight the enemy by strengthening your own fortress. Do

not spend valuable means and time in useless efforts in attempting to destroy or eradicate a universal foe, which lies waiting to attack the weak on every hand, but guard well your frontiers, build up your barriers of defence ; for fortification against a further invasion of such an attack is safer and wiser than to seek protection by useless attempts to destroy the enemy.

"We believe, if a successful treatment of tuberculosis is ever attained, that the microbe will be practically forgotten, and that the therapeutical measures will be directed to the condition of the system upon which the bacilli thrive."

If these "regulars" are at last teaching science and truth in this matter, then this book has done so from the start, and needs no revision in its claims concerning the treatment of consumption.

While writing this we read of one more great discovery by a professional in Rome, Italy, who expects that the inhalation of the gas containing a powerful antiseptic will destroy the bacilli. I am not at all sure that a case of consumption would be very much better if the bacilli could be killed off by wishing them dead. I can certainly say that that alone would not be sufficient for a cure.

Another mode of treatment worthy of mention, because it has hung on for a good many years, is the use of creosote taken by the stomach, but no doubt with the expectation of choking out the life of the germ in the lungs. If it has any utility whatever it is in disinfecting the contents of the alimentary canal ; but too often it impairs what is left of normal digestion. It is not uncommon to find some writer for a medical journal referring to the creosote treatment as "about played out."

Inhalation of dry vapors with antiseptic properties, balsamic medicaments with soothing powers, have their place in the treatment of consumption, aside from any thought of using something to paralyze the bacilli. When the inner membranes of the lungs are inflamed one sort of air or vapor may be more comfortable or congenial to them than another. The air of pine forests has been found agreeable and helpful. Thus we approach the subject of climatic treatment for consumption. Here, again, we find no end of difference of opinion. Many resorts have been discovered, proclaimed, utilized, and abandoned. A few are still in vogue, favored, patronized. The fact is that the relation of climates to consumptives is not a small matter. There is not only the

FIG. 140.



GETTING FRESH AIR.

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quality of the air but of the soil, the proportion of sunny to cloudy days, the altitude and barometric pressure. Then again, as in everything else, the locality that may seem just right for one consumptive may not fit another, or all.

### CLIMATIC INFLUENCES CONSIDERED.

Climatic influences analyzed disclose many factors. A writer in the London *Spectator* asserts that the value in the Swiss treatment is not "the air of the Alps," but *the air*. His idea is that the benefit obtained at Davos, or Moritz, may be had at home at less cost if people would live at home in the open air as they do in the Swiss mountains. While it is true that consumptives need no end of fresh air, and nothing is more free and easy to get almost anywhere, it is equally true that they need sunlight, and the locality having the most bright days and the most available sunlight may be far preferable to places where the sun is much obscured.

Theodore Parker, the celebrated preacher who succumbed finally to consumption, was much interested in its relation to heredity and climate, and wrote upon the subject. One of his most important observations, as I see it, was that a family living on the southeastern slope of a hill or a mountain enjoyed health, while one of the same family who was living in a house on the northwestern slope developed consumption. This might be just as true of a family living in one big house. Those occupying rooms with a northern exposure, without sunlight, would be more liable to develop consumption, or at least the predisposed conditions, than others residing on the sunny side.

A gentleman who was sent to Arizona with bad lungs thinks this climate simply wonderful. He admits that it is hot, but very dry. He thinks the dryness the important factor. He seems to forget about the power of the sun's rays where there is so much clear weather and so little moisture. The salubrity of Liberty, New York, and the Adirondacks is attributed largely to *their sunny slopes* giving a maximum of sunshine and excellent drainage. Good drainage means dry soil, perhaps more important than dryness of the atmosphere. An item in the New York *Tribune* gives the result of studies by Drs. Mitchell and Crouch on the influence of sunlight on tuberculosis in Denver. They attribute the benefits not only to the dry air and diminished atmospheric pressure, but also to the powerful influence of the solar rays. In regard to altitudes, it has been found that when the blood is low or poor in red corpuscles, as in anæmia, the effect of altitude or low pressure is to greatly stimulate the formation of new corpuscles, enriching the blood proportionately. Yet high altitudes are not well-suited to those cases where much of the lung is involved or the heart weak, or when extensive cavities with tendency to hemorrhage are

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known to exist. After all, it appears that the main advantages of the change of climate are due to an abundance of fresh air and sunshine, and few need go very far away from home to get these. This accords with the fact that consumption is a house disease. Houses limit our sunshine and fresh air. They often do worse by increasing dampness. Many a consumptive might be blest by being dispossessed of house and home and compelled to live in a tent in an open field. Dr. Hall, the fertile writer on hygiene, said: "If I were seriously ill of consumption, I would live out of doors day and night, except it was raining, or in mid-winter; then I would sleep in an unplastered log-house."

It is quite common for the faculty to recommend consumptive invalids to go South, after they have made some good round fees out of them! Probably this is because they want to get them off their list of patients. They get tired of hearing them say: "I'm no better, doctor." Cold air is just as good for consumptives as warm, provided it is *dry*. This is the important consideration. There is almost invariably an excess of mucus in lung diseases, which causes profuse expectoration. A dry and negative atmosphere excites active electrical radiation from the system, which carries off the internal moisture, rendering the mucous membrane less relaxed and the mucous secretions less copious. I would sooner go to Maine than to Florida if I had tuberculous lungs, although I would advise patients to go where they please, only taking care to avoid damp localities.

"A change of climate," a newspaper writer remarks, "has been commonly believed to be beneficial to the person suffering with consumption. Sir James Clark, of England, has, however, assailed the doctrine with considerable earnestness, and a French physician, M. Carrière, has written against it; but the most vigorous opponent of it is a Dr. Burgess, of Scotland. He contends that climate has little or nothing to do with the cure of consumption, and that, if it had, the curative effects would be produced through the skin, and not through the lungs. That a warm climate is not of itself beneficial, he shows from the fact that the disease exists in all latitudes. In India or Africa, tropical climates, it is as frequent as in Europe and North America. At Malta, right in the heart of the genial Mediterranean, the army reports of England show that one-third of the deaths among the soldiers are by consumption. At Nice, a favorite resort of English invalids, especially those affected with lung complaints, more native-born persons die of consumption than in any English town of equal population. In Geneva this disease is almost equally prevalent."

Notwithstanding, however, the opinions of Clark, Carrière, and Burgess, the results of my observation lead me to decide that change of scene and climate is good for consumptives. The real mistake is to

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depend upon any particular temperature or climate for restoration. If the patient travel through *various* localities, his system will gather up those properties in which it is deficient. If he lack iron, breathing the air, and drinking the water of a section where iron is largely produced, will of course benefit him. If lime be deficient in his system, the air and water of limestone countries will prove useful. For almost all cases of pulmonary disease, breathing the atmosphere of a pine region administers to the diseased mucous membrane a balsamic property which is beneficial. In this particular Dr. Burgess is wrong. The lungs and skin both take in what the system hankers after. You have only to place a diseased body in a position to come in contact with what it wants, and the *vis medicatrix naturæ* will take it in and use it, just as a dry sponge will absorb water. The South, however, is no better than many Northern climates. Some parts of Wisconsin are said to have superior climate for lung diseases. I have been told that horses with heaves soon recover when driven to the central part of that State. Minnesota, too, has been highly recommended, and I have known of some cases visiting that State with benefit. It may be put down as a pretty good rule that persons living on the seashore, affected with pulmonary difficulties, may be benefited by a visit to Wisconsin or Minnesota, or to some mountains in the interior; while those who have been accustomed to an inland climate may visit the seashore to advantage; but the theory that tropical climates favor the recovery of pulmonary invalids is entirely exploded. The soil of Key West is enriched with the bones of deceased consumptives.

### ARTIFICIAL INFLATION OF THE LUNGS.

It is not likely that one could obtain all the advantage to be had from change of altitude without going from home, but I find one writer arguing that it is a forced distention of the lungs in high altitude which benefits, and so he teaches his patients the art of *mechanical expansion*, or voluntary, enforced, deep-breathing. He says: "I have practised but two specific exercises which Nature herself teaches. The first is an imitation of the cough, and the second of a person stretching." He recommends also filling the lungs to their utmost capacity and letting the air escape slowly through a small tube, and he finds that the repetition of such exercises many times a day is very beneficial. He thinks some lungs chronically lazy, and that they need systematic exercising.

### DEEP-BREATHING AND CHEST EXERCISE.

Dr. T. J. Mays contributed an article to the *Century Magazine* on the subject of deep-breathing as a remedy for consumption, in which he wrote: "It is evident that proper development and expansion of the



lungs by well-regulated breathing must be regarded as of the greatest value in the prevention and in the treatment of some stages of pulmonary consumption. Much has been written on the subject of artificial inflation of the chest and bringing into action that upper part of the lungs which tends to become idle. Consumption is not a disease which originates in a day; but it is an outgrowth of morbid habits and agencies which may even antedate the birth of the individual. Defective breathing is one of those habits, and its pernicious prevalence is more widespread than is supposed. I feel that the good which may be accomplished by following the simple means suggested cannot be overestimated. They should be continued until they become a part of the very nature of the breathing organs itself, until the habit of deep-breathing becomes established and goes on without any extra effort." For many years I have recommended all my consumptive cases to persist in such exercises, and the above quotations are given mainly as further evidence of their utility and importance.

Dr. Tucker Wise, an English physician, gives this very wise advice about breathing: "Learn to breathe habitually through the nose and not by the mouth. Children ought to be taught this habit when they are young. The nasal passages act as a filter for the inhaled air. Much atmospheric impurity and even disease germs, which would otherwise enter the throat and lungs, then get arrested and expelled in the nasal mucus. Hold the body erect and avoid constrained positions of the chest, or a habit of shallow, listless breathing when at rest. Take a long-drawn sigh at intervals, to expand and contract the lungs, and so preserve chest elasticity and capacity. If circumstances do not admit of a person affected with tubercle occupying a separate bedroom, let a large airy room be selected, with separate beds; the window should be kept partially open day and night" (I should say provided the temperature is not below forty-five degrees), "the room scrubbed out once a fortnight, and the ceiling and walls cleaned and colored yearly."

It may well be added that chest and lung exercises should be systematically practised by all persons, so that the conditions of disease may not be invited in lazy, inactive, ill-ventilated lungs.

Dr. J. Gardiner Smith, physical director of the Harlem branch of the Y. M. C. A., New York, is another advocate of systematic chest exercises, even before there is any indication of weak lungs. He says:

"The capacity of the thorax, too, may be increased by judicious exercise in breathing. The passive individual in a healthy condition at each inspiration inhales perhaps thirty cubic inches (Kirke) of air. This is called 'tidal' air. The average individual without special practice in breathing or vigorous physical exercise of some kind can inhale a veritable quantity over and above this, called 'complemental,' air. Again, this individual can exhale, by forced expiration, a variable



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## DEEP-INSPIRATION

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 he wrote: "It is evide

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quantity over and above the ordinary tidal air called 'supplemental' or 'reserve.' There still remains in the chest after a forced expiration a certain quantity of 'residual' air, estimated (Kirke) at one hundred cubic inches. This quantity also varies with the ability of the individual to contract all the diameters of the chest. In my statistics of 2,000 men of average age, about twenty-three years, the total capacity of the chest ('complemental,' 'tidal,' and 'supplemental' air) was about two hundred and fifteen cubic inches, and this quantity is about the same for 2,000 men since that reckoning. This capacity by practice was increased by fifteen cubic inches (average) within one year."

"Upper chest or thoracic breathing (see Fig. 141) may be practised on command 'inhale' and 'exhale,' or 'one,' 'two,' and 'three,' 'four.' On the first command, or first two counts, raise the upper chest, upper and forward, to the fullest extent (see dotted line). Do not raise the shoulders. On command 'exhale,' or 'three,' 'four,' the chest should recede; keep head erect. Pupils will grasp the idea more quickly and better by placing the left hand on the upper chest, inhaling and exhaling through the nostrils. This may be done to music (count of sixteen). The photographs show the proper movement of the chest."

"For abdominal or diaphragmatic breathing (see Fig. 142). On command 'inhale' and 'exhale,' or 'one,' 'two,' and 'three,' 'four,' lower and raise the diaphragm. This action presses the abdominal organs downward, and thus, on the first command, of 'one,' 'two' the abdomen protrudes (see dotted line). Do not move the chest-wall or bend the body."

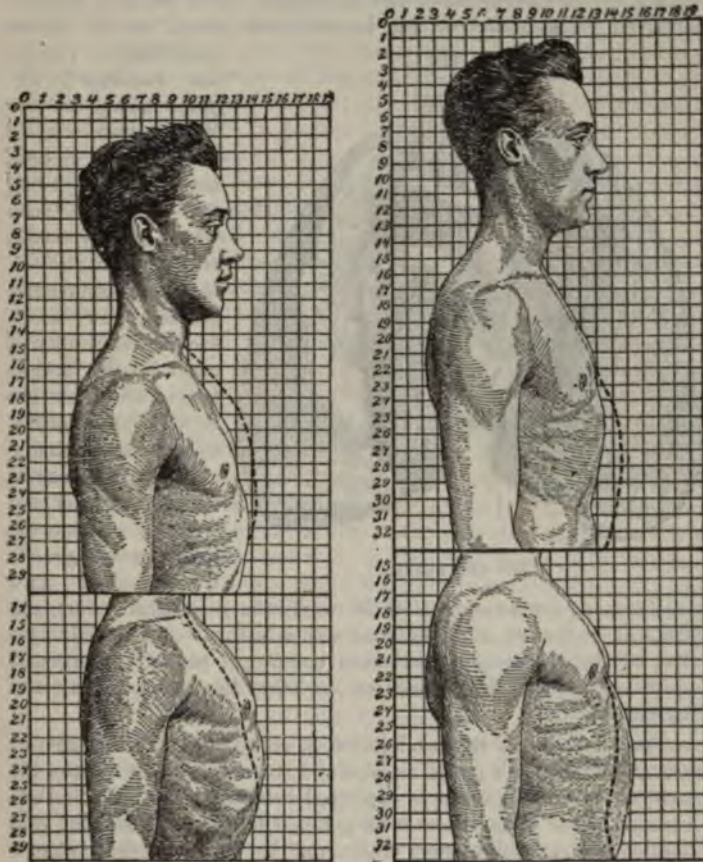
As to exercise in general it is impossible to give advice to suit all cases. Some need more of a "rest cure" than of an exercise cure. If the temperature is not above 99.5 degrees Fahrenheit, moderate exercise is advantageous. When it over-excites the heart's action or produces fatigue fever, there is more indication for rest than exertion.

Cheerfulness and freedom from mental excitement are essential to the recovery of a consumptive patient. This fact becomes apparent when the philosophy of respiration is explained. It is held by all medical writers whose books I have read, that respiration is wholly produced by the upward and downward motion of the diaphragm which divides the stomach from the lungs. This is only true in part. Besides the movements of the diaphragm, I am convinced by experiments, that the air-vesicles, permeated as they are by minute nerves, have a contractive and expansive power in themselves, so that when the diaphragm is in any way disabled or prevented from performing its functions freely, the lungs can in a measure supply themselves with air. The unprofessional reader must understand that the lungs are not expanded by the air entering into them. The diaphragm falls and the air-vesicles are opened by the same electric force which is employed by

the brain in producing the pulsations of the heart. A vacuum created, and the air rushes in—this is the act of inhaling. The diaphragm contracted and drawn up, and the vesicles closed by the electric force act-

FIG. 141.

FIG. 142.



CHEST EXERCISES.

CHEST EXERCISES.

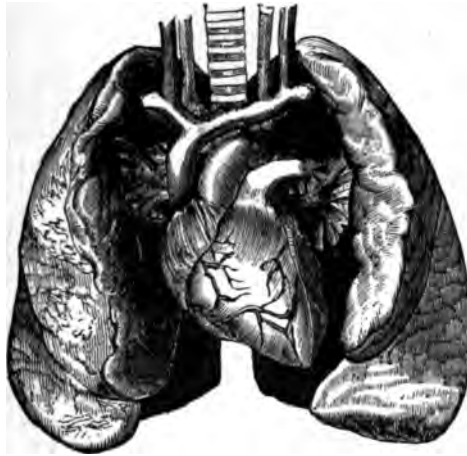
ing on the nerves ramifying through these organs, and the air is expelled—this is exhaling.

Were the human system wholly dependent upon the upward and downward movement of the diaphragm for respiration, women who compress their chests with corsets and other close-fitting garments

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would be unable to breathe at all. It is true that such foolish people breathe but little, and that the air penetrates only the upper portion of the lungs. But what little air they do inhale is chiefly obtained by the expansion of the air-vesicles and the chest-walls, nearly or quite independent of the movements of the diaphragm, which becomes literally paralyzed. The action of the nervo-electric forces on the nerves

FIG. 143.



LUNGS AND HEART.

ramifying through the respiratory organs, being the motive power which keeps them in motion, and the brain being the reservoir from which the nervo-electric forces are derived, the reader can readily perceive how necessary is tranquillity of mind for the promotion of convalescence in the consumptive, and also how pulmonary difficulties may be induced by grief and trouble. Under the influence of grief, trouble, fear, and

anxiety, many are aware that their respiration is subdued, short, and inefficient, so that an occasional long sigh is instinctively resorted to for relief of the oppression experienced because of partially suppressed respiration. Mental joyousness, on the other hand, favors deep and frequent breathing.

The possibility of the development of consumption out of nervous prostration, through a partial paralysis of the nerves which control the nutrition of the lung-tissue is explained in Chapter X., on Nervous Diseases. Some writers have even gone so far as to claim that consumption is invariably of such origin, and that there is never a chance for microbes to settle and tubercles to develop until the failure of nutrition has prepared the soil for these seeds of tuberculosis. This idea is favored by the success of electricity or electrical medication in many cases. Vital electricity is undoubtedly more intense than any which can be artificially produced; but as quantity can be obtained to any desirable extent by various electrical contrivances, it often surpasses intensity in effectiveness.

## LIVING WITH ONE LUNG.

The entire destruction of one lung by tubercles or ulceration need not excite serious apprehension, if the invalid is so situated as to be able to avail himself of superior medical skill. Persons often live to a good old age with only one lung. I have observed in cases of this kind which I have treated, that, after the progress of the disease has been stopped and the tubercles of the remaining lung removed, the latter gradually expands and sometimes almost fills the cavity created by the one which has decayed or dried up. I have now in my mind one case, in particular, illustrative of this remark: a lady, whose case was given up as hopeless by a score or more of physicians, but who has been kindly spared to her husband and children through the instrumentality of my treatment. In her case the left lung had been entirely consumed, and the destructive disease had made considerable inroad on her right lung. The last examination which I had the pleasure of making showed that the right lung had so expanded as to fill nearly one-half the cavity occasioned by the destruction of the left. The reason of this is obvious. The right lung having to perform the same amount of labor intended for two, the air-vesicles by degrees enlarged, and with their expansion the lobes extended their increased dimensions into the vacant chamber of the left chest.

Accounts are given in the records of many hospitals, of old people who have died of other than pulmonary diseases, and whose chests, on being opened, exhibited the fact that they had lived many years with only one lung. Healed cavities have also been found in the lungs of such subjects, showing that either Nature or the physician had cured them of consumption. President Jeremiah Day, of Yale College, during his early life was interrupted in his studies by lung disease and alarming pulmonary hemorrhage, but he lived to the age of 95 years! "An autopsy revealed the existence of cicatrices or scars of former ulcers in the upper part of both lungs, showing that extensive consumptive disease had existed more than sixty years before, the recovery from which had been complete." "Here, then," says Dr. Hubbard, in a paper read before an annual convention of the Connecticut Medical Society, "was all that remained to mark the beginning, progress, and cure of a case of tubercular consumption, occupying *twelve years* in its period of activity, and with its incipient stage dating back more than *three-quarters of a century*. A legible record, surpassing in interest and importance to the human race those of the slabs of Nineveh, or the Runic inscriptions."

In all cases of affection of the lungs the blood must be properly attended to. As intimated in various portions of this essay, almost all the diseases of these organs arise from impurities of the vascular fluids,

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It is for this reason that inhalants should not be depended upon to the exclusion of other remedies. There are physicians who treat pulmonary diseases exclusively with remedies to be inhaled. Their success is in no instance permanent, excepting in those cases wherein the affection had been induced by simply an inflammatory condition of the lung. The inflammation subsiding, and the irritated mucous membrane healed by the inhalants, a cure in this way may have been possible. The value of inhalants is not for a moment to be questioned. They must in nearly all cases be employed to some extent, but to rely upon them exclusively is almost as absurd as to stake the life of the patient upon the success of whiskey and cream. What I have said, commencing on page 856, on the subject of inhalation, may be interesting to the consumptive reader.

With the advancement which has been made by a few independent medical men in the treatment of consumption, no one suffering with this disease should for a moment entertain the idea that his or her case is hopeless. The popular systems of drugging have of course proved futile, and because you have failed to receive relief at the hands of your family physician, or from the use of some popular panacea, you may settle down into the belief that your disease is beyond the reach of human skill. From this despondency, rally, I pray you. Waste no time in uncertain experiments, but place your case in the hands of some physician who devotes his exclusive attention to the treatment of chronic diseases. Many years ago in Northern Vermont a well-known merchant was stretched upon a bed in the last stages of consumption, as was confidently supposed. The best physician of his county had given him up, and celebrated medical skill of Montreal had been resorted to, but the wise men of the profession shook their heads. It was expected that he could not survive many days. In this hour of gloom, his devoted wife, determining to make one more effort, sat down by the bedside of the sick man, and in a letter to the author presented the symptoms. Guided simply by this presentation of the case, I prepared and forwarded medicines which fortunately arrived in time. Immediately on taking them, his strength revived, and so rapidly, that it was feared that the treatment consisted of some strange and powerful stimulant. It was gravely predicted by the doctors and neighbors that a fatal reaction would soon follow. I was even blamed for the presumption of holding out any encouragement of cure in this hopeless case; but, to the happy disappointment of his friends, he steadily gained until he was restored to the family circle, his business avocations, and his former health. Although I had the pleasure of meeting this gentleman *after* his recovery, I have been instrumental in curing hundreds that I have never seen; one case, in particular in the same section of country as the above, of hemorrhage of the lungs, which had



also been pronounced hopeless by resident physicians. The case, indeed, was regarded as so far beyond the reach of medicine or other means of cure, that at the time he consulted me the doctors had ceased to prescribe, and he was simply being kept up on stimulants.

THE MAIN THING TO EFFECT A CURE.

In treating consumption, whatever is done to meet the acute symptoms, the main thing to be aimed at is the blood. Use all the adjunctive means which observation and experience approve, but do not neglect the important work of restoring strength and purity to that fluid which circulates through all parts of the system, and imparts to every organ the atoms it needs for preserving its wholeness and integrity. Auxiliary remedies may better be dispensed with than this one for the regeneration of the blood ; but the wise and experienced physician, while he works with the main lever, will employ as many assisting ones as can be usefully adopted, and one of the most useful and simple assistants is the habit of deep breathing, which can be practised at all times, much to the aid of the physician and the comfort of the patient. An enthusiastic writer in the *Evening World* says : "Enough cannot be said of full, deep breathing. It is no hobby or wild notion, but if you would prove its benefits practise it daily, and you will increase the circulation, purify the blood, and send it, rich and hot, to warm the feet, make ruby lips, and plant roses on the cheeks. It will aid your digestion and give you a clean, sweet breath, promote sleep, quiet the nervous system, strengthen the throat and vocal organs, and increase the chest capacity. It will also cure your asthma, catarrh, and bronchitis, and prevent lung trouble." In conclusion let me urge all who have perused the foregoing essays on diseases of the breathing organs, to turn to Chapter XII. in this Part, and read it attentively,



## CHAPTER III.

### DISEASES OF THE HEART AND BLOOD-VESSELS.

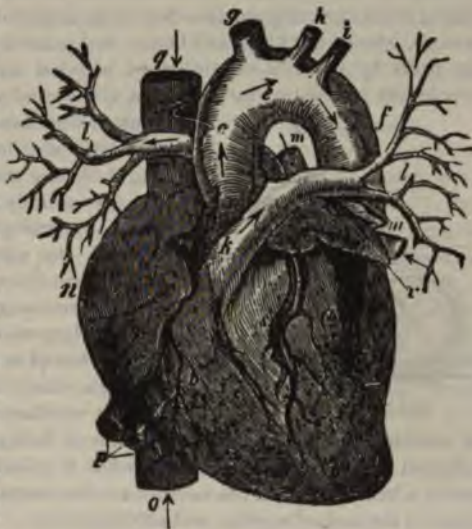


THE heart and blood-vessels, and the blood contained therein, constitute what is called the blood circulatory system. Some description with illustrations of these parts is given in the First Chapter of the First Part of this book. What has been stated there need not be repeated here. So thoroughly is the whole human body permeated with blood-vessels of greater or lesser degree, that if it were possible to freeze the body solid, and then by some means melt and dissolve away all tissues or substance except the blood-vessels and their contents, there would still remain the form of the human body and all its organs properly related to each other. Even the outlines of the skeleton or bony man would be preserved. I have called the heart the capitol of this great system, and this capitol is located in the thorax or chest between the lungs with which it is intimately associated by means of large blood-vessels. This intimate relation of the heart and lungs is exhibited in pictures to be found in the previous chapter on Diseases of the Lungs. As the heart is the only other organ in the chest the diseases of which I will describe, I consider this an appropriate place to present what I have to say about diseases of this organ, and what little I shall have to offer concerning diseases of the blood-vessels may be well included in this chapter also.

The heart is really a double pump—two hearts that beat as one. Its substance is mainly made up of firm muscles closely and intricately blended for power and durability. It has four cavities and four important sets of valves. One heart, or one side of it, keeps the blood going through the vessels of the body generally, while the other side has the smaller task of sending blood through the short route to the lungs. The two hearts work together in unison, showing two movements, one

of contraction, by which the blood is forced out of the cavities of the heart, and a second motion of relaxation or expansion, during which the heart-cavities fill up again. As the contractions occur about sixty times a minute, or more, as long as life lasts, the heart is properly accredited as being the most busy organ of the body, but if the movement of relaxation or expansion may be properly considered a period of rest and ease, then it is fair to say that the heart lets up on its work during about one-third of the time, or takes it easy about eight hours a day. It is hardly possible that it can sleep in naps of a third of a second, but that is all the sleep that it gets. With this imperative necessity of being ever on duty, we may credit the heart with being one of the most reliable organs of the body and the more especially does it deserve credit when we remember how often it is disturbed about its work. The heart's action is regulated from the nervous system through the great pneumogastric nerve, but through this it is also frequently subject to disturbance and irregular action. When there is trouble brewing in the stomach below the heart, it is subject to what is called reflex irritation, reflected through the nerves whose duty it is to control and regulate the organs above and below the diaphragm. When business is going wrong

FIG. 144.



THE HEART.

*a, b*, the left and right ventricles; *c, e, f*, the aorta; *g, h, i*, the innominate, left carotid, and left subclavian; *k*, the pulmonary artery, which is given off from the right ventricle, and conveys the blood to the lungs; *l, l*, branches of the pulmonary artery distributed to the right and left lungs; *m, m*, the pulmonary veins, which bring the oxygenated blood from the lungs to the left auricle; *n*, the right auricle; *o, p*, the ascending and descending venae cavae, which return the blood from the general system to the right auricle; *q*, veins which convey the blood from the liver, bowels, and spleen; *s*, the coronary artery which carries blood into the substance of the heart.

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somewhere in the domain of the great lung-stomach nerve the heart is liable to suffer from the faults of its neighbors. On the other hand, in the disease called pneumonia, which causes temporary solidification of more or less of the lung-tissue, the work of the heart is tremendously impeded because the blood is dammed back by obstructed vessels.

Again, the heart has more troubles to contend with than those arising from the common disorders of its neighbors. Many thoughtless persons, who do not know any better, and some of them who do, overtax the heart by extreme or prolonged physical work, or stimulate it to over-action by the unwise use of tea, coffee, and alcoholics. When the

FIG. 145.



ENLARGING HIS HEART.

heart is stimulated hour after hour and day after day to work faster than it ought, it may wear itself out and give out prematurely. It may at first become hypertrophied or enlarged through the natural result of being called upon to over-exert itself. Many young persons gradually bring about some enlargement of the heart (now often referred to as "the cycle-heart") through their over-indulgence in cycling or other athletic sports, so that

by middle age they have a very feeble or flabby sort of heart, for the enlarged heart is prone to become what is called a dilated heart, and that is a heart in which the cavities are too large and the muscles unequal to the task of regular and efficient work.

There are still other ways in which the heart becomes weakened, diseased, and incapacitated from no fault of its own. Ordinarily it is saved from friction in its outside movements by a smooth sac or pericardium, and there is no great wear and tear from the continuous current of blood through its valves and cavities, because these are covered or lined with a thin, smooth, shiny membrane to save friction. The valves are wonderfully constructed of delicate folds of this membrane with firm bands or stay-ropes which make tight joints when the valves are closed. No mechanical valve for machinery exhibits more perfect and beautiful adaptation of means to ends. When, however, through the fault of the organs or processes which have to do with making good blood and keeping it clean, this fluid becomes the carrier of impurities or irritating properties, as in a rheumatic state of the system, then the outer sac of the heart and its lining membrane are liable to suffer from inflammation. When rheumatism "goes to the heart" its affinity is for the same sort of tissue that it worries in the joints. It either inflames the outer sac, causing pericarditis, or it irritates the lining membrane, producing roughness in place of the

usual smoothness, and if severe enough it may distort the valves and cause what is called valvular disease of the heart. Pericarditis is generally an acute, serious disease, of which I need give no further description. Endocarditis, or inflammation on the inside, may come on in a chronic, quiet sort of way, leading to gradual distortion of the valves. It is estimated that the blood of the whole body is sent through the heart about twice a minute, so that when it contains irritable properties it would seem as though they would come more in contact with the lining of the heart than with any other one organ of the body. Unless this lining be rather callous it is perhaps surprising that it does not oftener become irritated to the point of inflammatory disease.

When the valves become twisted or distorted, as above described, and they are no longer tight joints on closure, then at each contraction of the heart a part of the blood slips back through a leaky valve, and it has to do some of its work over again and again. Not only is this felt or made evident by symptoms about the heart itself, such as distress and palpitation, but there must, of course, be defective circulation of the blood leading to suffering in other parts. Physical weakness and disinclination to exercise is a conservative sort of symptom, for all the organs of the body are likely to suffer inactivity when deprived of sufficient blood. The lungs are likely to show shortness of breath, and more or less bronchitis with expectoration. Sleep is apt to be disturbed through lack of proper blood circulation in the brain. The kidneys are liable to become deficient, slow, or inactive, and a tendency to general dropsy is not uncommon. Though valvular defects are not really curable, there is a natural method of compensation whereby the muscles become increased, the whole organ growing larger and so equal to the task of doing more work than it was built for. It is owing to what is called compensatory hypertrophy that many cases of organic heart disease go on living year after year, to the surprise of physicians having them in charge. In spite of the fact the text-books teach, that persons with organic heart disease may go on living for forty years, I must confess that I have been repeatedly surprised with occasional visits of former patients whose hearts upon examination have been found to be very rickety—not a professional term, but a very expressive one. One of the most remarkable was an old gentleman of seventy years, whose life I had expected to make a little more comfortable and prolong somewhat by appropriate treatment. His machinery was put in such good order that he lived to the age of ninety-four! There is a general and unnecessary dread of organic heart diseases, for physicians know that they take longer to kill than most other organic diseases. It is, however, well that every person so affected should be made acquainted with the fact early so that he may at least know how to avoid aggravating it. Of course such cases should avoid all strains,

either quick or prolonged physical effort, and it will be well, too, if they can learn to control their emotions and avoid intense excitement from any cause. They must learn to let alone stimulants, tea, coffee, liquors, and tobacco. By living a smooth, easy-going, comfortable sort of life they can prolong it indefinitely and postpone the painful and distressing symptoms for many a year. While a physician cannot get at a heart to repair the valve as the watchmaker can repair a watch that is going wrong, yet it is possible for a physician to be of great service to his patients with organic heart disease. He can do this by the aid of medicines, which help to control the action of the heart pretty directly, but more by regulating the operation of other vital functions so that the heart need not be impeded by reflex disturbances. The enfeebled heart will manage pretty well so long as it is not annoyed by a blockade of the blood circulation in a torpid liver, by gases and poisons developed through indigestion, or by impurities with which the blood becomes overcharged from inaction of the bowels, kidneys, or skin. In short, if the general health be maintained "on a level" a patient may not be greatly inconvenienced by a heart imperfection.

In earlier editions of this work I was disinclined to say much about this class of troubles because I had seen so many persons unnecessarily distressed by fear of heart disease when there was nothing wrong with them but functional disorder growing out of other affections. Many persons have worried themselves sick and greatly aggravated the symptom of palpitation through mere apprehension. My further study of all cases, real and imaginary, leads me to conclude that both kinds would be better off for knowing the facts. I have endeavored to make it plain that the person with valvular disease who will adopt the right course of living, may feel secure of a moderately active life for many years. But any such person would certainly live longer for knowing that it is not safe for him to run to catch a train, to jump a fence, or do other straining work. Probably those who do suffer some from the symptoms of an impaired heart suffer less than those who have functional disorder of it. When the symptoms of distress in the region of the heart are great and there is much fear of impending disaster, indigestion is generally the cause of the symptoms. I might say that the dread of heart disease is one of the symptoms of dyspepsia.

#### **Palpitation of the Heart.**

Palpitation is perhaps more often of nervous origin than otherwise. Palpitation and "the blues," with proneness to fear all sorts of evil, make a combination of symptoms common to any state of nervous debility and may result from a variety of causes. Nervous palpitation is apt to occur when lying down for the night, while palpitation due

to organic disease is more likely to occur from over-exertion ; but palpitation from over-exertion may be merely from nervous debility.

Palpitation of the heart may be induced by various causes. There may be too great an expenditure of nervous force upon this organ, and when this is the case, it is generally found on examination that it is at the expense of

other organs. When the liver becomes torpid, it will often be discovered that the nervous stimuli belonging to that organ have in some way been diverted to the heart, resulting, of course, in the inactivity of the former, and the excessive activity of the latter. Persons subject to cold extremities often have all the nervous forces and vascular fluids which should be occupied in keeping the feet and limbs warm, acting in and about the heart, causing the latter to jump and beat unnaturally, violently, and injuriously. There are affections of the procreative organs, which are attended with such nervous derangements as to give both to them and the heart an undue supply of nervous stimuli. Persons of both sexes are subject to them, and when they exist all of the other or-

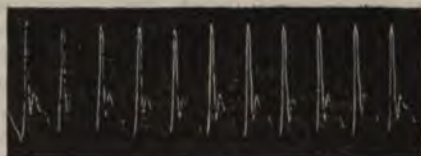
gans of the body are robbed to supply this abnormal diversion, which sets the amative organs of the brain on fire, and makes the heart leap with morbid excitement. The stomach may become so distended with wind, when digestion is sluggish, as to encroach upon the cavity occupied by the heart, and interfere with its action to such a degree as to cause palpitation or labored pulsation. Excess of flesh in some cases

FIG. 146.



THE NORMAL HEART.

FIG. 147.



IN VALVULAR DISEASE.

FIG. 148.



IN DISEASE OF A CORONARY ARTERY.

Tracings made by a Sphygmograph.

renders the space naturally allotted to the heart, too limited, and the same symptoms are then experienced as when the stomach invades it. Excess or insufficiency of blood, excessive mental emotions, whether of joy or sorrow, and too severe and protracted physical exercise, may induce an unnatural action of the heart. There is more fear of heart disease among dyspeptics and neuroasthetics than among those who really have it, for the former are apt to be full of all sorts of fears, not only suffering from actual but also from imaginary symptoms. It is generally true that occasional palpitation is of nervous origin, while that from organic disease is pretty persistent.

Sometimes the diagnosis—the discrimination between functional disturbance of the heart and actual organic disease—can only be made by a personal visit to a physician and giving him a chance to apply his ear over the region of the heart. There are normal sounds due to the heart's muscular contraction and the clicking of the valves, and there are sounds varying from the normal according to the location of defects in the valves. Much also can be learned of the state of the heart by an experienced finger on the pulse, and also by an instrument called the sphygmograph, which gives a mechanical tracing on paper from which physicians can learn much. Still, in every case that is not extraordinary, answers to such searching questions as are given on page 761 will enable an experienced physician to determine the real condition of this important organ. If any doubt remains in his mind he would be likely to call for a personal examination. At least I should.

Heart-burn is a symptom which has nothing to do with the heart but belongs entirely to the stomach. The burning sensation, attended with the feeling of constriction, is due to the accumulation in the stomach of an irritating, sour secretion, which often rises to the back of the mouth and scalds the throat. It is a symptom of dyspepsia, and is merely mentioned here in order to say that it is really a stomach-burn and not a heart-burn.

#### **The Tobacco Heart.**

The tobacco heart is common enough to deserve a few words of explanation. Tobacco so affects the nerves controlling the heart's regular action that in course of time the regularity is lost, and in its place the subject has an intermittent action, shown by the finger on the pulse at the wrist as well as by the ear at the chest. The heart goes "steady by jerks," drops a beat now and then, or even seems to quit for a moment. This may even be appreciable to the patient, and the first trouble that will cause him to visit a physician. Not infrequently I discover the intermittency in men who have no sense, feeling, or appreciation of the fact that they have acquired "a tobacco heart," but now and then I have a call from someone who notices the seeming



stoppage and is a little annoyed by it. Often it will be the only symptom that an otherwise well man has to complain of, and it may become to him even a source of worry. It is indeed lucky for such a man if it worry him enough to lead him to learn its true nature and adopt the only remedy, which is, of course, the avoidance of the cause, *i.e.*, the use of tobacco. When tobacco manifestly disorders the heart's action, as evidenced by intermittency of pulse, it is also impairing the nutrition and muscular power of the heart, and paving the way for serious organic and possibly incurable change. It is one of Nature's warnings which should not be heedlessly ignored. When the heart wobbles from tobacco and by its distress pleads that the use of tobacco be discontinued, it is time to quit for sure. The quitting will very likely, for awhile, occasion other symptoms, hard to bear, in one who has been accustomed to the habit, but the fight can be made easier for those who accept my aid in helping them to make it. The opium-eater can be materially aided by a physician in the struggle to wean himself from that powerful narcotic, and the slave of tobacco can more easily free himself from the use of the poisonous weed by the aid of remedies suited to his temperament and idiosyncrasies.

#### Angina Pectoris.

This is a phrase of very serious import, or of very little according to the nature of the case. It has been applied in many cases of neuralgia of the heart, and in some cases to indigestion. Dyspepsia can at times give rise to very severe distress over the region of the heart, but it is doubtful if that distress ever quite equals that arising from the condition for which we ought to reserve the name of Angina Pectoris. Neuralgias about the lungs and heart may be as sudden and severe as any where else, but neuralgia is less extensive than true angina. This genuine distress of the heart itself arises from impaired nutrition of the organ. The first great blood-vessel leaving the heart is called the aorta, and its first and smallest branches are the little arteries which branch out over and into the muscles of the heart itself to supply them with nourishment. It is possible in various ways for these coronary arteries (see Fig. 144, letter *s*), to become interfered with so as to lessen the blood-supplies to the heart itself, practically causing its slow starvation. Sometimes the little arteries become dense, hard, or ossified, and sometimes the substance of the heart shows fatty degeneration from mal-nutrition. Such a heart is necessarily a weak one, and no wonder if occasionally it goes into spasms through incapacity to bear its never-ending drudgery. Attacks of angina are intensely painful, and with them comes a sense of utter powerlessness, fear, and dread. An attack may last but a few seconds, or a few minutes, or for many hours. The patient becomes pale and livid around the mouth, with a cold perspir-

#### 444 DISEASES OF THE HEART AND BLOOD-VESSELS.

ation upon the forehead. The pulse is irregular, small, and weak, or sometimes not affected at all. These painful spasms generally follow some exertion or exposure to cold. They may be brought on through indigestion or constipation. Dr. W. S. Connery gives an excellent description of the characteristic pain of this affliction :

“ The pain differs in character and situation and in intensity in different cases. Some sufferers will say that it is indescribable ; nothing in their previous experience suggests even a comparison. Others speak of the pain as a severe cramp in the heart, or as if the heart were gripped by an iron claw ; while pain of a shooting neuralgic character, sometimes intermittent, sometimes persistent, seems to radiate from the chest to the left shoulder, the inner side of the arm, the forearm, and the third and fourth fingers. Occasionally there is a sensation as of the wrist being grasped so tightly as to cause pain. With the pain in the heart there may be pain down both arms or shooting up into the left side of the neck, very rarely in the right arm only. Occasionally the pain may be felt first in the arm and seem to travel up to the chest, or may come in the inner side of the arm as a kind of warning of an attack. Another description of the pain is that it feels as if the sternum (breast-bone) were being crushed back to the spine, or, again, as if the whole chest were being held in a vice. In other cases the pain is compared to a bar of iron across the upper part of the chest ; in others, again, to a ton weight upon the lower part of the chest.” It was such a spasm that ended the life of that great-hearted and big-brained representative American, Colonel R. G. Ingersoll, in July, 1899. This is the one organic disease of the heart which causes sensation of dread, and which there is reason to dread, but those who were close to the Colonel near the last years of his life know that he bore his sufferings bravely and exhibited no fear of the inevitable outcome. He died in the effort not to be treated as an invalid. In this and in any other real heart disease life can only be prolonged by treating one's self as an invalid. So the Colonel was more brave than wise, if he knew or appreciated his condition and danger.

#### **Diseases of Blood-Vessels.**

The blood-vessels which convey the blood from the heart, branching off to all parts of the body, are called arteries until they run off into the smallest channels, and these are called capillaries. The arteries have three coats, like some rubber tube or hose, an outer firm, fibrous tubing, a middle muscular elastic layer, and a glazed inner surface. The most uncommon change in disease is one which belongs mainly to advanced life, called sclerosis or hardening. The tube loses some of its elasticity and becomes hard and stiff through partial ossification. This leads to various infirmities of old age.



Writing of the degenerated tissue-changes which occur as old age comes on, or of "Senility," Dr. T. W. Higgins, in a paper read before the New York Medical Association, said: "Old age is not a question of years; it is not determined by the grayness of the hair alone, nor will it do to measure it by the feel of the temporal artery. Cazali's statement that 'a man is as old as his arteries' is too short a phrase to contain the whole truth of so large a theme. Yet it is in the walls of the blood-vessels that the most important though the less striking changes take place. De Menge examined five hundred senile cases microscopically, and found such changes in all. At first, these changes are slight; but soon in the cells of the inner coat of the minute blood-vessels, apparently from the irritation of some peccant material in the blood circulating through them, a degeneration of the normal serous to fibrous and fatty cells takes place. An extension of the same process to the muscular coat follows, with the resulting thickening of the wall, diminution of the calibre, and hindrance to the normal blood-supply. A rich train of the manifestations of senility originates from this factor. Atrophy and softening of the brain from lessened blood-supply, apoplexy from a broken weak vessel, and gangrene of the extremities arise in this way. Another sequel is weakness of muscle, which gives rise to such diverse symptoms as presbyopia; dilatation of the heart and the arch of the aorta; dilatation of the hollow organs, as the stomach and bladder; torpidity of the bowels, with constipation and all its chain of evils.

"It will be noticed at once that the pathology of chronic alcoholism presents an almost identical chain of lesions. The acute observation that 'for the alcoholic the years count double and triple' would indicate that the effects of old age and of alcohol on the system were the same, and each intensified the other.

"One is certainly justified in asking this apparently absurd question, can it be true that the microscopic changes found in old age are identical with those produced by alcohol, the toxin of syphilis, or the products of defective nutrition in the gouty or rheumatic subject? The term toxin of old age sounds ridiculous, but, after reading Bouchard's monograph on auto-intoxication, it appears slightly less so. If in the normal organism sufficient toxins are daily elaborated to cause death if not eliminated by the kidneys and liver and lungs and skin, it becomes comprehensible how the system may become clogged by the ashes of its own fires."

#### Aneurism.

Another form of disease consists in a local softening, weakening, and expansion of a blood-tube. This gives rise to a change in shape, as illustrated in several forms in Fig. 149. One may often have a chance

to see similar weak points developed in a rubber tubing of the hose of a fire company. The hose can be saved for awhile by bandaging on the outside. In the human arteries Nature sometimes endeavors to repair, with more or less success, the weak spot by a new deposit in the inside. These enlargements of an artery produced by the pressure of the blood

FIG. 149.



VARIOUS FORMS OF ANEURISMS.

within are called aneurisms. They may occur on the largest artery, the aorta, not far from the heart, or on arteries of lesser size in various parts of the body. When they occur on arteries on the extremities there are methods of surgical treatment which cure, but aneurism in the chest or abdomen are beyond the reach of surgery, and there is seldom much hope by medical treatment. Yet it is fortunate when an early diagnosis can be made and the patient warned to take life easy. Such things are apt to occur when men attempt to do work for which they are unfitted; they result from straining. The symptoms are sometimes obscure, but the presence of an aneurism is apt to be known by the pulsating tumor causing uncomfortable pressure on neighboring parts. The tendency is to a progressive enlargement and thinning, until death occurs by rupture. But sometimes Nature long delays this finality by sending new tissue to strengthen the weakened part or by forming a clot in a sac-like aneurism and closing it up. I once treated a case of aneurism of the aorta of a man who suffered much

distress until he took my advice and treatment and was seemingly cured, probably by so enriching his blood while maintaining a quiet life that Nature was somehow enabled to patch up the breach. I say somehow, because Nature has more than one way of repair in such cases when she has the right material and blood with which to make the repairs. The one thing essential for safety in all such cases, is avoidance of strain.

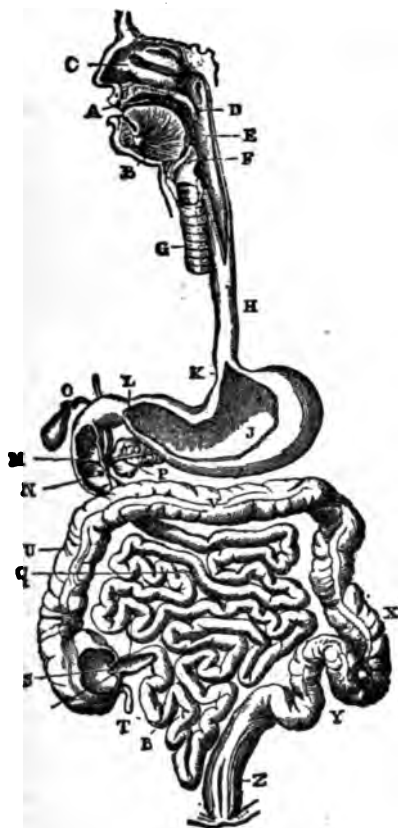


**Apoplexy.**

This cannot properly be classed as a chronic disease, but the causes that lead to it may be of a chronic nature. Minute aneurisms occur on small arteries in the brain, visible only by the aid of a magnifying-glass, and sometimes so frequent as to remind one of the beads on a string. The rupture of a little aneurism here is the cause of most apoplectic strokes followed by paralysis. In other cases when apoplexy may be due to the blockading of the artery in the brain by a little granule which has been washed away from the valves of the heart, the growth of such fibrous particles being one result of the roughening processes of inflammation already described as one origin of heart disease. I have said that the inflammation of the heart's lining membrane was due to scrofulous or rheumatic impurities of the blood, and so, too, are these weak spots in the arteries, giving rise to aneurisms, large or small. Probably the beginning is some little erosion or spot of softening similar to an ulcer on the skin arising from blood disorder. It is evident that one is fortunate to have blood impurities break out rather than break in, and it is equally clear that the best way to avoid disease of the circulatory system is to keep one's blood clean. One may be able to bear occasional attacks of rheumatism with fortitude or get along with pretty constant rumbling pains about the joints, but one should not be content to put up with such infirmities indefinitely when appreciating the fact that this state of blood may be rotting out the blood-vessels and preparing the way for sudden break down or prolonged enfeeblement. The policy of a stitch in time when the blood becomes impure may prevent more than nine kinds of chronic and obstinate diseases.

When one of the minute aneurisms bursts and the blood is allowed to flow out of its proper channel and press upon the substance of the brain, there will be for a time loss of consciousness, and if the stroke be not fatal, some part of the body—sometimes one whole side—will be paralyzed for many weeks or months. The cure for this paralysis comes about through the gradual re-absorption of a clot of blood, and then all goes fairly well unless another little bulb on a blood-tube bursts. The occurrence of one stroke of apoplexy should be caution enough that it is time to lead an easy life, avoid stress, mental or physical, and also to make an effort to improve the general health as far as possible. Any inactivity of vital functions, any retention of waste matters, favors the recurrence of another stroke; whereas, good clean blood may for a long time ward off more breaks. Among the causes of disease of the blood-vessels deserving mention is syphilis. Probably no blood impurity is responsible for more damage of this sort, and a long fight for the purification of the system from this scourge would

FIG. 151.



## DIGESTIVE MACHINERY.

This figure gives, in a diagrammatic way, a good idea of the digestive organs. A, mouth; B, tongue; H, œsophagus; J, stomach; O, gall bladder; M, duodenum; N, bile-duct orifice; q, small intestine; P, pancreas; S, ileo-cœcal valve where small intestine joins large; U, ascending colon; V, transverse colon; X, descending colon; Y, flexure of colon; Z, rectum.

consequently these very naturally coalesce under the laws of chemical or electrical attraction. Fig. 151 will assist in giving a proper understanding of this explanation. Thus we see how the nutritious matter is separated from the innutritious or useless. Under the laws of electro-chemical attraction, marriages take place between inanimate as well as between animate bodies. The pancreatic fluids marry the nutritious, and the bile marries the innutritious. The former combination is sucked up by the absorbents to nourish the system, while the latter passes along down into the colon, where there is a sort of rendezvous for fecal matter. How well adapted the bile is to act as a consort must be seen when it is remembered that it is a soapy kind of fluid, well calculated to lubricate the fæces and make them pass easily through the intestines. The bile, too, gives the yellow color to the fecal discharges.

I have never seen in any medical work, nor have I ever heard, a philosophical description of the process of digestion, and the separation of nutritious from innutritious

matter. I presume the theory I have given will be new to all my readers, professional as well as non-professional ; but when the chemical constituents of the bile and the pancreatic fluids are taken into consideration, together with those of the saliva and gastric juices, does it not perfectly accord with common sense ? If so, and I think it does, it is eminently proper that the pages of this book should give birth to it, for the author of " Medical Common Sense " desires to make them the disseminators of original views, bearing the impress of self-evident truth.

### **Chronic Affections of the Liver.**

The liver is the largest organ in the body, and is subject to a variety of chronic as well as acute disorders. The office of the liver is to suck up from the blood those properties which constitute bile, and to send them to the duodenum to assist digestion, as explained in the foregoing essay, and then to the intestines to lubricate and soften the excrementitious matters, and conduct them through the serpentine intestinal canal.

The most common derangement to which the liver is subject is torpidity. This is the result of nervous disturbances. Either the nervous forces are unequally distributed among the organs, or there is an insufficient supply of nervous vitality in the system. In either case, the liver lacks nervous stimulus, and the organ may be said to be partially paralyzed. Grief, fright, dissipation, or some bad habit, may produce an unequal distribution of the nervous forces among the different organs of the system. I often meet with cases wherein there is too great an expenditure of nervous force upon the heart, producing too rapid pulsations or palpitation, while the liver is almost deprived of it. Other organs may sometimes receive an excess at the expense of the liver.

When nervous debility exists, or when the patient is unconscious of any such debility, and his system does not contain its ordinary supply of nervous vitality, with which to keep the various vital organs active, Nature, ever disposed to avoid greater evils, is apt to withdraw a portion of the nervous stimuli from the liver. Why ? Because no one of the other vital organs can be slighted with the same impunity. Partially deprive the heart of the nervous forces, and its pulsations would become so feeble that death would soon ensue. Partially deprive the diaphragm and lungs of them, and respiration would become difficult. The patient would gradually die of suffocation. Partially deprive the kidneys of them, and the secretions of the urine would be retarded, speedily followed by dropsy or something worse. Digestion of food in the stomach must go on, however imperfect, or the system wastes for the want of nourishment, and nervous force must be sup-



## 452 DISEASES OF LIVER, STOMACH, AND BOWELS.

plied in abundance to stimulate the digestive process. In brief, the partial withdrawal of the nervous or electrical forces from any other vital organ than the liver would be followed with more dangerous consequences. Still, good old dame Nature, the common-sense nurse, will not deprive the liver of its due share of nervous stimuli, without giving notice at the same time to the invalid. She paints his face yellow with the bile which the liver fails to secrete from the blood. She constipates his bowels, and in some cases, to urge him on to give proper attention to himself, afflicts him with a painful and annoying difficulty in the rectum and anus called piles. While thus urging the invalid to give her means whereby to relieve the liver, she often gets insulted with a dose of calomel. She "asks for bread and gets a stone." But she graciously pockets the insult, knowing that it is the result of ignorance, and applies the nervous force, generated by the contact of the mercurial substance with the gastric juice or acid of the stomach, to the stimulation of the liver. The good old dame is then pestered to know how to get rid of the mercury, and, in some cases, allows it to attack some muscle, bone, or nerve, in order that the pain resulting therefrom may drive the victim to efforts to get rid of it.

### WHERE TORPID LIVERS ARE FOUND.

Although torpid livers are found almost everywhere, they are more common in the South and newly settled West than in any other localities in this country. I scarcely ever examine an invalid from the South who has not a dead liver. My theory for this is, that in tropical latitudes, in consequence of the expansion of the air by heat, less oxygen by weight is inhaled, and that consequently there is not so much oxygen or electricity imparted to the system, through the medium of the lungs, as in colder climates, while at the same time, the blood is less decarbonized, leaving more for the liver to do. Under such a climatic influence the system is apt to become deficient in nervous vitality and overloaded with carbon, unless the habits of the people are good—which they are generally not—one of their most common errors being a diet of excess of hog, hominy, and molasses, all of which are rich in carbon. Keeping hot coal fires going all the year round, in the South, would be just as sensible.

Proper attention to diet and other habits would, in a majority of cases, avert a tendency to liver derangements; but our friends in hot climates like living up to the Northern epicurean standard, and not unfrequently absolutely exceed it. Thus, an excess of work is given to the liver by the use of too much carbonaceous food, and less nervous force is supplied by respiration to enable it to perform the labor. While, in the extreme North, barbarous epicures may glut their stomachs with the blubbers and skins of whales, putrid whales' tails,

decayed seals, the entrails of the rytina, mixed with fresh train-oils, etc., without serious consequences, those of southern latitudes should eat but little animal food, and particularly avoid rich gravies, and other aliments which fill the system with carbon. "Greasy matters," says a popular writer, "though composed mostly of waste, useless, and excrementitious materials, which have accumulated in the cellular repository because the process of alimentation was increased beyond that of elimination, are not strictly poisonous. They doubtless contain a very small quantity, yet very impure quality, of substances convertible into nutriment. But as food they are to be regarded as *next to venous blood* in grossness and impurity." Considering, then, that the liver has to filter out a great share of this impure and gross matter, it can be readily seen why, at least, those living in climates predisposing them to inactive livers, should not eat such food. Instead of being more careless in their diet, the inhabitants of warm countries should be much more careful than those living in colder climates, so that, by preserving a healthy liver, this organ may do part of the work usually given to the lungs. Where the air is expanded by heat, and consequently less oxygen by weight inhaled at each inspiration, there is need for this. In unborn infants, who are entirely shut out from the oxygen of the air, the liver has to do the work of the lungs in decarbonizing the blood, but Nature provides for this necessity by making the liver larger than all the internal viscera, and still larger in proportion in utero life. After birth, when the lungs begin to perform their functions, this relative disproportion is modified, and it then behooves the more developed being to keep both organs in a healthful state.

People living under a southern sun can do this with care and the exercise of a little self-denial. Their food should be nutritious rather than stimulating. Gluttony and dissipation above all things should be rigidly avoided. Remember that the golden rays of the sun may paint the complexion brown, while every organ is faithfully performing its functions, but that when old dame Nature brings in a tint of yellow, the liver has failed in the performance of its duty.

#### WHY THE NEGRO IS MORE ENDURING IN THE TROPICS.

What I have just said regarding the influence of the atmosphere of the tropics on the liver, is applicable to the Caucasian rather than to the Ethiopian race. Old dame Nature has done all things well, and those who were especially made to breathe the scorched air of tropical climes have broader nostrils and greater depth and breadth of the respiratory apparatus (see Fig. 152), so that they may inhale a greater quantity of the heat-expanded atmosphere at each inspiration than can the Caucasian (see Fig. 153), with his compressed nostrils and less capacious throat and lungs. The liver, too, of the negro, is propor-

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tionately larger, while his nervous system does not possess that acute sensitiveness and liability to disorder which characterize the finely organized nervous structure of the white man. Nor does he seem to require so much nervous stimulus to carry on his sluggish physical machinery. Our sable brother is almost a stranger to nervous diseases. He sometimes has liver derangements arising from vascular impurities, but even then he gets off with comparatively little suffering, for the reason that his excretory pores are as much more open than those of his white neighbor, as the texture of his skin is coarser. Hence, the odorous effluvia which proverbially emanate from the skin of the unadulterated negro. In perfect health, the excretions of his skin greatly relieve the depurating labors of his liver, and when hepatic difficulties

FIG. 152.



THE ETHIOPIAN.

do overtake him, the amount of the excretions is considerably increased, unless the pores are simultaneously closed. The physical organization of the Ethiopian also better enables him to withstand the deleterious influences of bad air in malarious districts. It has been found that the hanging of wet blankets or sheets at the open windows in malarious regions, greatly purifies the air which enters an apartment. This is because water is a disinfectant, rendered so by its disposition to take up poisonous gases. Well, now, the negro has as good protectors as wet blankets or sheets at his mouth and nasal passages. The red lining of the lips and nostrils in health is always moist, as all know. Hence, the large lips and nostrils with which he is provided, with their large surfaces of the moist red lining or mucous membrane, serve as disinfectant protectors, such as the Caucasian, with his thin lips and compressed nostrils, does not possess. And the rule may be put down as invariable, that those persons, black or white, who have the thickest and widest lips, and the largest and broadest nostrils, can the best endure the depressing atmosphere of malarious tropics.

### LIVER-TORPOR COMMON IN NEW COUNTRIES.

Disturbances in the purity and tonicity of the air, are what predispose the people of new countries to torpid livers. The miasmatic emanations from the soil of a country recently cleared of its timber and shrubbery, greatly adulterate the atmosphere, and thereby induce those nervous disturbances which are so apt to leave the liver without

sufficient nervous stimuli. People living on new and unimproved farms are famous for torpid livers. Nearly all of them are enveloped in sallow skins; and in those presenting themselves to me for medical examination, I usually find the liver seriously involved, whatever other complications may exist. Even the livers of beef cattle driven here from such quarters and slaughtered for our market, are seldom free from disease.

It may not be possible, therefore, for the pioneers of new countries to entirely escape hepatic or liver complaints; but it is nevertheless true that such difficulties are more prevalent among them than would be the case if proper regard were paid to hygienic laws. Western farmers are proverbially great pork-eaters, and pork-eating overloads the blood with carbon, and gives the liver too much work to do. Nor are farmers alone addicted to the use of filthy swine's flesh. The denizens of Western cities glut their stomachs with spare-ribs and sausages. The farmers usually carry more healthy countenances than citizens, because their physical exercises are better calculated to dispose of the excess of waste and impure matter by perspiration. There is another reason why citizens wear a more sallow skin than the industrious farmer, which is, the vice in all cities of turning night into day, while farming communities, exhausted with physical labor, retire early. A Western citizen supposes he can expose himself to night-air with no greater injury than the indweller of the old Eastern cities receives who does the same foolish thing. This is an error. Miasmatic vapors, as before remarked, are more excessive in new cities, and at night-time they mingle more freely with the lower strata of air. Then, too, vegetation which, during the day, takes up carbon and gives off oxygen, reverses this process at night, so that carbonic gases are its nocturnal exhalations.

Here, then, we see why our Western neighbors cannot imitate the vices of our Eastern metropolitans without suffering a severer penalty by bringing upon themselves greater derangements of the nervous harmony and biliary system. To avoid these derangements they should not indulge, excessively, in carbonaceous food and drink; they should retire early, select for sleeping-rooms those apartments most elevated from the ground, in order to get beyond the miasmatic gases which hover near the earth's surface at night-time; open the windows for

FIG. 153.



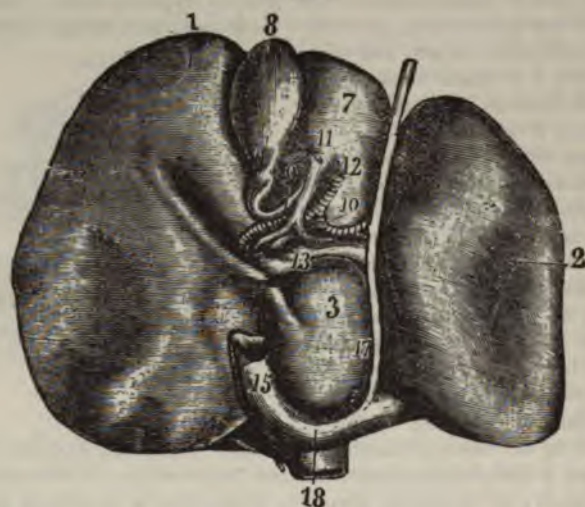
THE CAUCASIAN.



ventilation, and if the sleeping-room be near the ground, to escape the poisonous vapors, hang wet curtains before the windows, for water, as before remarked, is an excellent disinfectant, and readily takes up deleterious gases. In the most unhealthy localities it is better to ventilate sleeping apartments by this process than to breathe, over and over again, the air which has been poisoned by the exhalations from the lungs and skin.

Persons of sedentary habits in all countries can see, from the preceding suggestions, the necessity of breathing pure air, and plenty of it,

FIG. 154.



THE LIVER UNDER SIDE, SHOWING 1, 2, 3, RIGHT, LEFT, AND MIDDLE LOBES; 8, GALL-BLADDER; 9, 10, 11, GALL-DUCTS; 12, ARTERY; 13, PORTAL VEIN, WHICH CONVEYS BLOOD FROM STOMACH AND INTESTINES TO THE LIVER; 15-18, VEINS CONVEYING BLOOD TO HEART.

and observing correct dietetic rules if they would preserve healthy livers and a skin free from the sallow tint of bile.

Probably the ubiquitous patent medicine almanacs and advertisements are in the main responsible for the fact that the liver is blamed for the greatest number of human ills. A large class of chronic complainants find some satisfaction in the ready-made diagnosis, "Oh! my liver is out of order," and, though the doctors are inclined to laugh at the diagnosis, the chances are that the people are more than half right. When we consider the size and the numerous important functions of the liver, and its close relations with all the vital organs, it would seem

that if anything goes wrong with any of them the liver must get "out of order" too. If it be not deserving of all that is charged to its account, yet it is generally one of the delinquents; but in justice be it said, it is less the fault of the liver than of the man who carries it, and who puts impossible tasks upon it. In fact the liver does nobly, and compensates for much that other organs fail to do. It not only supplies bile to take part in the intestinal digestive processes, but it stands as a filter between the absorbent veins of the intestines and the general blood circulation, receiving all that has been taken up by them, working some over into proper shape for use, holding some in its storage for a better time, and eliminating in the bile those products which it would be unsafe to let pass. So it is a sort of rag-sorter, and a factory for working raw materials into finer form and eliminating the dross. Digestion is not half completed in the alimentary canal; the liver has its turn, and the products of digestion get a final cleansing in the process of oxygenation in the lungs.

The liver carries on several important lines of work—more than can be told here—and as yet physiologists don't comprehend them all; but it is pretty certain that one of its most important functions is to act as a sentinel against poisons sent to it from the intestinal absorbents. Digestion is seldom perfect, in spite of the gastric juice and numerous other digestive fluids, so that considerable food undergoes putrefactive change instead of digestion, and thus poisons develop which would do great harm if taken into the general circulation, but, being carried in the portal vein to the liver, they are arrested and transformed or cast out in the bile. If the contents of the intestines become too rotten day after day, the extra work thrown on the liver may tire it out, so there is reason enough why it should often become torpid. Then, in its weakened condition, the poisons slip through it and bring on symptoms of biliousness, feverishness, and various depressing effects on the nervous system. The ordinary symptoms of biliousness are dull, heavy, drowsy feelings, even to sick headache, sallow or yellow stained complexion, sometimes approaching that of jaundice, yellow-coated tongue and unpleasant taste, tendency to nose-bleeding or to hemorrhoids (from interference with blood circulation through a sluggish, congested liver), and mental moods of gloomy, despondent, and irritable kind. Locally there may be a sense of aching, heaviness, or weight in the right side. A catarrhal state of the blood is one of the results of liver torpor, and it is hardly possible to check catarrhal discharges anywhere until the liver has been restored to pretty normal activity.

#### OTHER DISEASES MAY RESULT FROM NEGLECT OF THE LIVER.

It is now being taught that when such disordered states are prolonged, they may lead to diabetes and Bright's disease, for Professor

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Bouchard and others have proved, by actual experiment on dogs, that when portal blood is sent into the general circulation without passing through the liver poisonous symptoms appear, consisting of fever, nephritis (Bright's disease), and albuminuria. No doubt the liver itself suffers and flinches when overloaded with poisonous products of imperfect digestion, and so in course of time its own tissue may become altered through inflammatory action, and what has been a torpid, overworked, tired, and *functionally* deranged liver becomes a hard, knotty, and contracted liver, one *organically* diseased, and that is called cirrhosis. Its duties are then more neglected than ever, the blood takes on a chronic state of self-poisoning, and its circulation through the narrowed blood-vessels is so impeded that dropsy develops, generally abdominal, and matters go from bad to worse till the end.

When the liver becomes irritated enough to harden and contract it is too late to talk of a cure, and, therefore, it is well to take notice of its first signals of distress, and give it a rest, or make things as easy for it as possible by a course of diet, abstemiousness, and medicines that help to make its tasks easier. From what has been said of the liver's functions it is easy to conclude that all means that will improve or perfect the first digestion will be of service to a torpid or an overstrained liver. Further, since all food-products, good or bad, must pass its inspection and manipulation, its day's work can be lessened by eating lightly, especially of concentrated foods, such as meats, fats, and sweets, and allaying the appetite mainly with fruits, green stuff, and succulent vegetables, with plenty of water to flush the main pipe and sewer.

Morbid appetite is one unfortunate symptom of congested liver, and ignorance of this fact is a large factor in the obstinacy of liver and digestive disorders. It must be held in check, as all the "liver invigorators" ever devised cannot relieve congestion when it is not. The reason why appetite is craving is because the cells of all parts of the body are not being properly nourished. The appetite is the voice of these cells calling impatiently for nutrition, but overloading the stomach, or indeed, taking a reasonable supply of food will not satisfy it so long as the liver is not properly doing its work. Set the liver right the first thing, then food can be properly utilized and the incessant cravings of appetite satisfied.

Another unfortunate symptom or effect of liver torpor is constipation, because the bile is an important element for stimulating peristaltic (muscular, worm-like) action of the intestines, besides its saponifying effect on their contents, which renders fecal matter more easily movable. Liver torpor favors constipation, and constipation aggravates liver torpor. Some say that calomel, long famous for its supposed stimulative effect on the liver, has no effect on that organ, but affords relief only by hurrying the bile down and out of the intestines.



Much of the unwise employment of mercurial preparations has been laid aside, but the relief of billousness and constipation by calomel is seemingly so prompt and efficient that very likely it is as much misapplied in this manner as ever—possibly more. Mercury is a foreign body to the human system, and can have no rightful place in its economy in health or disease. It is a mineral not normally found in any of the bodily tissues, but with a peculiar power of amalgamating with them, and settling down as a permanent element, much to their discomfort. It would do far more damage except that most of it is cast out with the cathartic effort of Nature to get rid of it; but when regularly used the little that is absorbed of every dose accumulates to undermine the constitution, as surely as it softens and disintegrates metals with which it comes in contact. Even the old-school practitioners are learning that there are "eclectic specifics" which give as prompt relief as mercury, and which may be repeated time after time, and employed year after year without injury. My "Vegetable Anti-Bilious Pills" afford a combination of safe and pleasant persuaders of normal function, that is a perfect substitute for blue pill, suitable for all ages, temperaments, and climates.

The difficulty of separating liver and "stomach disorders" in diagnosis will also be made evident in considering another way in which the liver suffers from its relations to its neighbors. The bile-duct (see Fig. 151, o n) is a small tube which conveys the bile to the duodenum, or that portion of the small intestine which leads off from the stomach, and in which intestinal digestion begins. When this part suffers from inflammation and catarrh, the trouble extends into the bile-duct, narrows the calibre, and impedes the flow of bile, besides vitiating it. This diseased action may go so far as to cause a full blockade, a damming back of bile, and jaundice, with its characteristic yellow stain of the whole skin. Except when the liver becomes torpid and inefficient because of lack of nervous stimulus, it is fair to suppose that it would have the right to say to its neighbors, when charged with disorderly conduct, "You began it," but when the doctor is called to repress disorder, he must deal with all parts involved.

#### BILIOUS HEADACHE.

Bilious headaches have their origin in a deranged liver. How are they produced? I can tell you in a few words. The liver in health extracts from the blood certain properties which, when collected together, constitute bile—a carbonaceous, soapy compound which, poured into the duodenum, becomes one of the agents of digestion, as described in other places in this chapter. When, therefore, the liver becomes so diseased as not to do this, the blood becomes loaded with these bilious properties, and the digestion becomes in a measure im-

paired. These irritating matters in the blood visit the head as well as other portions of the body, and coming within sensible contact with the delicate nerves therein, cause irritations which make themselves felt in the form of aches; and these aches are aggravated by the disturbed digestion ensuing from the absence of the bilious properties from the lower stomach. The bile is just where it is not wanted. In the duodenum it is useful; in the circulation it is a mischief-maker; and while neglecting its own business, it is meddling with that of others; a result not unfrequently met with when people do not attend to their own affairs.

There is still another way in which bilious headache of a periodical kind may be produced. In some constitutions, the accumulation of

FIG. 153.



BILIOUS HEADACHE.

little else but drowsiness or heaviness, until all at once a crisis arrives, the liver suddenly awakens from its inaction, and takes up and pours into the lower stomach, bile in such immoderate quantities as to irritate the duodenum, causing it to contract and eject quantities of the irritating fluid into the upper stomach, where the food is first received after passing the mouth and the œsophagus. The presence of this intruder causes intolerable nausea or sickness, and such a disturbance of the stomach nerves, that the nerves of the head become involved, producing what is commonly called sick-headache, which usually continues until relief is obtained by vomiting. When the bile is entirely removed from the stomach by this effort, the headache disappears. If in any case, or at any time, the duodenum can prevent this reverse action, and carry the deluge of bilious matter downward into the intestines, bilious diarrhœa, instead of headache, takes place. It is for this reason that some persons subject to sick headache are also liable to bilious diarrhœa, and it will be noticed in such cases that the attack of headache passes by, or presents itself very slightly, when the bilious matter takes this course.

Nearly all persons subject to bilious headache have sallow complexions derived from the influence of the bilious matter in the circula-

bile in the circulation causes

tion, and usually, too, they are greatly annoyed with drowsiness during the day, and with a predisposition to restlessness at night; while those who do drop off to sleep without difficulty awaken in the morning with the remark, that they have slept too soundly, and feel uncomfortable in consequence. Bad tasting, bitter mouth, also frequently contributes to the discomfort of bilious people, because the blood, overloaded with bile, allows some of these bitter, nauseous properties to sweat through the mucous membrane lining the mouth and stomach, as well as through the external skin; and when the coatings of the stomach are covered with this unwholesome secretion, the tongue usually presents a yellow, furred appearance. This internal bilious perspiration often destroys the purity of the breath, just as the external perspiration in such cases renders the effluvium disagreeable; but the latter is not so readily noticed because it passes off more diffusively from the whole surface of the body, while the former is thrown out with each exhalation in a concentrated stream from the breathing passages.

No person need suffer with bilious headache. Because it is not regarded fatal, many people who pay thousands of dollars for fine houses, nice furniture, sumptuous tables, and other creature comforts, go through life with this discomfort, which greatly disqualifies them for the enjoyment of the things they provide so lavishly for the entertainment of themselves and friends. If they would stop for a moment to reflect upon it, they would see how much more they would enjoy were they to drop off a few superfluities, if necessary, and make an appropriation for "internal improvements;" for, notwithstanding all political wrangles on this topic, I can confidently assure them that in all cases of this kind, it is strictly "constitutional." A little attention to the *live-er* as well as the *live-ing* would result in greater comfort and happiness than is now enjoyed by thousands in all conditions of life.

#### GALL-STONES.

When matters in the region of the liver have been permitted to go wrong for some time, it often happens that gall-stones are formed, and their passage through the slender duct is attended with terrific spasmodic pains, cold sweats, and vomiting—an attack of gall-stone colic—and such attacks may occur periodically for years, unless corrective treatment be applied. Very large stones may be formed in the gall-bladder, and be removed by cutting through the abdominal walls. The largest we ever saw pictured was like a small potato, two inches long by over an inch in diameter.

Gall-stones occur mostly in persons of middle life, and in women more than men, especially if prone to obesity, indolence, and inactivity. The corset and trimming in of the waist-line can displace and constrict the liver and very likely impede free flow through the gall-ducts, and

this mistake may have much to do with the larger percentage of gall-stone cases among women than among men, who seldom wear tight bands about the waist. A failure to drink enough water no doubt favors increased viscosity or denseness of secretions, and this has been suggested as another favoring cause of formation of gall-stones, which is due to a process of crystallization, as when sugar crystals form in syrup. The liver produces a pound of bile daily, and whether it shall be fluid or too viscid will depend somewhat upon the water-supply taken into the body in food and drink. Among the means commonly recommended for combating the gall-stone tendency is the free use of moderately alkaline (not limy) waters, as Carlsbad, Vichy, and our native Lithia waters, and of green vegetables and juicy fruits, but often there are evidences of some perverse or pernicious derangement of digestive processes which requires systematic, well-selected treatment to relieve. Yet they sometimes form in young persons who look the picture of health; and without any very evident cause. Many gall-stones may jostle each other in the gall-bladder, like pebbles on the beach, for a long while, without giving trouble, but nothing can produce more sudden and severe illness (with possible danger to life) than the descent of a stone when it starts to move on from the gall-bladder through the narrower canal to reach the outlet of the intestines. Such attacks, if severe, are apt to be "characteristic" enough to make an easy diagnosis—severe and cutting pain in the right side, with jaundice and vomiting—but there are cases of seeming indigestion whose obstinacy is really due to gall-bladder disease.

Dr. Edward S. Stevens thus writes of these obscure afflictions:

"In many of these cases we can 'in the first place' merely be suspicious of the existence of gall-bladder disease. When one applies for relief from trouble with the stomach and gives a history of having applied for relief in vain to many well-qualified physicians, we may suspect that there is some condition present apart from the stomach. If the supposed signs of indigestion are independent of the taking of food into the stomach, our suspicion is strengthened. But this is not sufficient to establish a diagnosis of gall-bladder disease. The suspicion of it being aroused, months may elapse before anything is noticed, more than simple distress in the stomach with eructations of gas. Stones may be present and yet cause no pain, or catarrh of the gall-bladder of low grade may exist without either pain, tenderness on pressure, or a perceptible tumor being noticed. If one does not hastily jump at a conclusion, he will sooner or later discover other signs of the suspected trouble. There may be a slight sallowness of the skin. If it is from bile, there will be a reaction in the urine upon the proper test, although the colors may be quite faint. There may be periodical passages from the bowels of strings of mucus, occasionally of blood also.



"Just as certain mental emotions may cause at times the involuntary evacuation of the rectum or urinary bladder, so they may give rise to an effort on the part of the gall-bladder to expel its contents. This may be more or less painful, or perhaps produce symptoms of distress so slight that it is not considered important enough to refer to a physician. I have seen this slight distress follow worry over business affairs and a lawsuit. In one such case the diagnosis was confirmed by the passage of a calculus from the bowels after a sharp attack of hepatic colic. In a second case prolonged and severe distress was caused by deep grief over the death of a child at one time, and at other times excitement produced a like effect. In another case hypochondriac distress was subsequent to a prolonged fit of laughter. The diagnosis, strengthened by other signs, was confirmed in this case by cholecystectomy (the operation by which gall-stones are removed by cutting through the walls of the abdomen and into the gall-bladder).

"Among the most interesting symptoms dependent upon the existence of gall-bladder disease with which I have met are certain reflex symptoms. In considering them one should bear in mind the extensive distribution of the branches of the pneumogastric nerve and the sympathetic. Among the most common of the reflex disturbances is palpitation of the heart. Others which I have observed are pain in the urinary bladder, distress in breathing, and spasmodic coughing spells with loss of voice."

Water is a valuable solvent, and the free use of it, as before remarked, will be found beneficial. Just plain pure water will answer, but some of our mineral waters, as already suggested, will be more effective. If mineral waters of an alkaline property are not employed, then those freest from impurity, like the Poland or Waukesha waters, may be advantageously used. Bicarbonate of soda is a good household remedy and usually near at hand, but the proper thing to do is to first ascertain all the complications entering into the immediate trouble, and then pursue for days, weeks, or months, such alterative treatment as will cover all the derangements existing in any given case.

### Dyspepsia.

This is one of the most common diseases that afflict humanity, and the suffering is by no means confined to the greatly abused stomach. The brain at once enters into sympathy with this important organ of digestion when it is disordered. So intimately are the head and stomach connected by the nervous system that mental disturbances will destroy appetite, and arrest the progress of digestion; and digestive derangements will produce depression of spirits, irritability, hypochondria, and almost insanity.

The immediate causes of dyspepsia, nearly everybody is familiar with. They are—rapid, immoderate, and irregular eating; excessive drinking; injudicious drugging; tight dressing of the waist; excessive brain labor; grief; anxiety; and jealousy. Tobacco-chewing, in many cases, causes such a waste of the salival fluids by expectoration that the food enters the stomach insufficiently mixed with them. The importance of the salivary fluids in performing the digestive function is given in the introductory matter of this chapter. The excessive use of alcoholic liquors irritates and inflames the lining of the stomach, and this leads to dyspepsia. Only those who have weak or feeble stomachs without irritation, are benefited by the use of tonics or stimulants. The immoderate use of condiments also induces irritation or inflammation of the lining of the stomach. I am often surprised beyond expression at the test of endurance some people put upon their stomachs in the wholesale use of pepper, mustard, and horse-radish. The amount of any one of these things swallowed at one meal by some individuals, would draw a blister in an hour or two if applied to any external part of their persons. How the stomach manages to dispose of these things without getting burned, is a mystery to anybody who realizes how much more susceptible the mucous membrane is to the effects of irritants, than is the cuticle. Hence, it is perceived, the immediate causes of dyspepsia are as numerous as are bad habits. The *predisposing* and *perpetuating* causes, however, are what are generally overlooked. What are they?

The predisposing and perpetuating causes of dyspepsia are, impure blood, and derangements of the nervous system. When the blood is at fault, the lining of the stomach is liable to an attack of eruption, or irritation, or inflammation. In this form of dyspepsia the invalid experiences pain, soreness, gnawing, burning, or other inflammatory symptoms; with an empty feeling, sourness, wind, trembling, nausea, etc., at the stomach. Not all of these symptoms in any one case, but some one or more of them. When the dyspepsia proceeds from nervous derangements, the symptoms are usually: palpitation of the heart; trembling at the pit of the stomach; a weak or all-gone feeling at the stomach; while the body appears attenuated, and the countenance pale; the sleep disturbed; the spirits more continually depressed, and the mental and physical energies subdued.

In either of the foregoing forms of dyspepsia, the food passes through more of a rotting than of a digesting process, and the gases emanating from the decomposing mass cause acidity and flatulence. Then the nutritious substances are so contaminated by properties calculated to irritate or inflame the blood, that rotten apples would answer about as well for food as sound vegetables and meats; and they would impart about as much benefit to the system. Much good food is spoiled in the cooking of it, and much by poor digestion.

Epicures, good feeders, or those who are denominated "high-livers," and those who have plenty of flesh on their bones, are the most liable to that form of dyspepsia which is perpetuated by blood impurities. Imprudence in eating produces in, and sends forth from, the stomach to the vascular fluids, impurities which in time "come home to roost." They pay a visit to their maternal home, and their presence is anything but agreeable; for like wanton children, they mark and deface the walls, and turn everything topsy-turvy. Some unfortunate people, however have this form of dyspepsia, who have

not been seemingly irregular in their habits. This is because they either inherited or contracted scrofulous impurities; or took injurious medicines, or were poisoned in some way. These dyspeptics are lean or fleshy according to their temperaments. I have met dyspeptics whose parents on one side were scrofulous and, on the other, predisposed to diseased livers and weak stomachs—a capital hereditary combination to produce dyspeptic progeny. The children of such parentage are as sure to inherit dyspepsia as those of affluent parents are to inherit wealth.

Professional men, students, and other brain-workers are most liable to that

FIG. 156.



NERVES OF THE STOMACH.

The above figure shows how extensively the stomach and digestive apparatus is permeated with nerves. The liver (1) is turned up to exhibit the anterior surface of the stomach; also the gall-bladder (2). The organic nerves of the great solar-plexus are marked 3, 3, while the pyloric extremity of the stomach is shown at 4 and 5; 6, 6, 6, mark the omentum.



form of dyspepsia which is perpetuated by nervous derangements. By too close mental application they exhaust nervous vitality, and, consequently, too little nervous stimulus is given to the stomach to render digestion properly active. Dyspepsia of this form may also proceed from nervous derangements induced by any excessive mental emotion, or by marital excesses, masturbation, or from diseased procreative organs of either sex, as these affections invariably prostrate the nervous energies.

#### THE HORRORS OF DYSPEPSIA.

Dyspepsia, in many cases, is perpetuated by both blood and nervous derangements; or, in other words, the blood of the dyspeptic being impure and the nervous forces insufficient or misapplied, a complicated form of the disease exists. Mental depression and irritability, if not imaginary horrors, are ever present when both of these constitutional derangements form the root of the digestive disturbance. "Physically," a writer speaking of this class of invalids, remarks, "the dyspeptic has many evils to contend with; pain in the chest, and other parts of the body, particularly the left side and the sternum. The muscles of the body become weak and flabby, manifesting soreness on the least unusual exertion, with lameness in the limbs, etc. There is tenderness in the region of the stomach and the hips, felt upon pressure. The extremities are cold and rigid; the skin dry, rough, and pale; hands and feet usually cold, are sometimes hot and burning. The patient at times is distressed with night-sweats, bad sleep, and worse dreams. He seems heir to a thousand evils, changing in their nature—old ones vanishing, new ones appearing. Some of the most alarming to the sufferer are palpitation and cough. He is troubled with vertigo, ringing and other sounds in the ears. Sometimes he hesitates in his speech—has uncertain action—is pleased with nothing—pleases nobody—has abundant occasion for regretting blunders of manners and morals. Moral power he seems greatly to lack; he has lost self-control, follows this whim and that, but never the doctor's prescription to the end—he cannot remain in the mood long enough. Hence the disease is prolonged, especially as time is necessary to a cure. He has no patience for that, he is so moody, so wavering. In a word, he is only the shadow of himself." This is a very fair description of the condition of body and mind in a case of complicated dyspepsia. A man or woman so affected cannot be an agreeable companion! The victim grumbles and frets involuntarily, and creates a domestic hell at his or her own fireside. Surrounding friends try to be forbearing and make all due allowance for the unfortunate physical derangements of the invalid; but incidents will occur when patience is strained almost to the point of breaking, when relatives and friends are compelled to cry out,

"What next?" as the tadpole has been reputed to exclaim when he loses his tail!

There is still another class of dyspeptics who suffer little except from leanness, susceptibility to cold, and general lassitude. Persons thus affected have stomachs so inactive that the food might about as well pass down outside as inside. A soup bath might answer still better! The stomach is never provoked into making use of what is put into it, and in many cases the appetite of these invalids is perfectly enormous. Everybody wonders where so much food goes to. It seems as if the hungry and wasted system was constantly crying for food, causing a disposition to eat voraciously, while the stomach remains an idle spectator to all that is passing. It is questionable whether invalids so affected derive any nourishment at all from the usual digestive process. As the food passes along the œsophagus, and through the upper and lower stomach, and finally along the crooked path of the intestines, the mucous membrane absorbs enough nutriment to keep the person alive by the aid of air, sunlight, and social magnetism. The predisposing and perpetuating causes of this form of dyspepsia are, deficiency of red corpuscles in the blood, and lack of nervous vitality; and these causes are aggravated in every case by the very disease they have induced.

There is a too general propensity to let up on normal digestion, and to look for "pre-digested" foods and artificial aids to digestive processes, instead of trying to give all digestive functions a fair and normal amount of work. Of course there is, too, the tendency to overtax by gluttony, or excess of concentrated ("rich") foods, besides the habit of throwing the duty of one part on another, as of swallowing food without mastication, seemingly with the idea that the stomach has teeth, claws, or other apparatus for comminuting the food. Most folks seem too tired or hurried to work their jaws and teeth as Nature intended, and in this laxness they have even been encouraged by shortsighted teachers of the physiology of digestion.

#### IMPORTANCE OF SALIVARY DIGESTION.

For a long time the physiologists, even influential writers of textbooks, have been in serious error regarding mouth digestion of starch and the function of the saliva. Food, even when sufficiently masticated, is not long held in the mouth, subject to salivary action, and it was taught that when it was swallowed, the acid secretion of the stomach at once checked salivary digestion, and postponed further change in starchy foods until they could be passed through the stomach and take another turn at being digested by intestinal fluids and pancreatic juice; but later investigation has shown that thorough mixing of food with saliva counts for more than the short time of mouth-mastication, and that for

awhile the saliva is very active even after the food has been swallowed. Not at once is the food mass rendered acid by gastric juice, and while it is yet alkaline and neutral, which may be half an hour, the saliva, if it has been well mixed with the food, "gets in its fine work," so that even eighty-five per cent. of the starch may be digested before the contents of the stomach are forwarded to the small intestine to complete the job.

For this recent revelation of new light on salivary digestion we are indebted to Dr. Kellogg, editor of *Modern Medicine*, and he further claims that saliva aids the food in "stimulating glandular activity on the part of the stomach whereby an active and abundant supply of gastric juice is produced." Dr. Kellogg's statements are based on over 4,000 analyses of the contents of the human stomach at the Battle Creek Sanitarium. What he says is well worth listening to, remembering and acting upon, and to help "drive it in" the minds of our readers, and so encourage renewed activity of their jaws, more bites to each morsel, longer lingering on its sweetness and thorough salivation, we quote from him as follows :

"It is more than probable that hasty mastication is one of the principal causes of dyspepsia in Americans. The gastric juice cannot act upon the starch ; it can only act upon gluten and other nitrogenous elements of bread and other cereal foods after these elements have been set free by the action of the saliva upon the starch which constitutes the greater bulk of these food substances.

"This neglect of mastication, and resulting salivary indigestion, explains the enormous demand for malt preparations (we do not refer to beer, which is worthless as a digestive agent) which has sprung up within the last few years. The product of malt digestion, or maltose, is precisely the same as that of salivary digestion, the action of the saliva upon the starch resulting in the production, not of glucose, as was formerly supposed, but of maltose.

"Another cause of salivary indigestion which we should mention is the abundant use of sweets. In order that the saliva shall exercise its properties efficiently, it is necessary that it should act in a suitable medium. A temperature of 100° and an alkaline or neutral reaction are necessary for prompt and vigorous action on the part of the saliva upon the farinaceous elements of food. A low temperature hinders this action, and acidity stops it altogether. The presence of a large amount of sugar also hinders the action of the saliva.

"It is thus evident that the copious drinking of cold water, or the taking of ice foods in connection with meals, is a means of producing salivary indigestion. The free use of strong acids, such as vinegar, in connection with cereal foods, is equally objectionable. Nothing could be more absurd than the combination of strong acids with vegetable

elements, as in pickles. This is probably the reason why many persons find themselves unable to use acid fruits without fermentation. The acidity may be sufficient to neutralize the action of the saliva upon the starch.

"Evidently it is not only physiologically absurd to add sugar to farinaceous foods, since the starch, which composes one-half the weight of these foods, is all converted into sugar in the process of digestion, but the practice is also highly injurious, since it prevents the normal action of the saliva upon the starch."

This will be unwelcome intelligence to children who cry for sugar on their bread and butter, and for the adult who greatly relishes buck-wheat cakes with maple syrup, sweetened rice-puddings, bread-puddings with hard sauce, and indeed all rich pastries. But it can do no harm to understand the various processes of digestion if such knowledge will lead to even a *little* more caution in our habits of eating. Probably if we had been trained to it from childhood, we should like our farinaceous foods quite as well without the addition of sugar, or other sweets, but with the present generation it will be difficult to greatly change the habits of the people. The very fact that everybody does not become a dyspeptic while using sweetened farinaceous foods would indicate that there is some saving process which in a measure neutralizes the effects of these unhygienic combinations somewhere along the alimentary tract. It is more than probable, however, that this process is not active in the digestive machinery of those who have become the victims of dyspepsia, and all such persons while suffering from the disease would do well to profit by the information herein given. Those in robust health will no doubt disregard Dr. Kellogg's theory, for they have the digestive capacity of an ostrich, and will use all such popular dishes as their appetites crave.

#### INTESTINAL INDIGESTION.

The preceding matter sufficiently emphasizes the importance of salivary digestion and thorough mastication which, it need hardly be said, take place in the mouth. The next process entered upon after the food descends to the stomach is really the least important in the whole business. It is necessary to say this distinctly, if not repeatedly, in order to correct the very prevalent and equally erroneous idea that indigestion is mainly a *stomach* trouble. I have already commented upon the remarkable capacity of the stomach-membranes to bear a large assortment of irritating substances, but one of the somewhat curious evidences of its toughness is the fact that this membrane itself secretes a juice—the gastric juice—which softens, digests, and dissolves other meaty substances of the same sort. In short, we can digest cooked tripe, prepared from the stomach of other animals, but fortunately

every stomach knows too much to turn upon itself and digest its own substance, except now and then when it develops an ulcer so different from ordinary ulcers as to make it seem as though it had forgotten itself in some spot and eaten a hole there. Examinations, post-mortem, of persons who have died with dyspepsia, not necessarily of it, generally show a much better condition of the membranes of the stomach than of that part of the intestinal canal which is joined to and follows it. The business of the stomach, its main function, that of digesting albuminous food, seems to be a very important one, especially in those people who are prone to live mainly upon meat; but the small intestine, besides the digestive fluids secreted from its own membranes, receives from the pancreas a digestive fluid which has several properties or ferments. One of these, called trypsin, does with meaty foods what pepsin does in the stomach, but this pancreatic juice provides also a ferment to emulsify or saponify fat, which means fitting it for absorption, and a diastase for digesting starch. Bearing these facts in mind, we ought not to have been quite as much surprised as we were when we learned that a surgeon of Zurich had so successfully removed the whole stomach of an aged woman that she was able to live comfortably without it for over a year. She had cancer of the entire stomach at the age of fifty-six, and more, too, as the cancerous disease was disseminated through other vital organs. Her stomach, however, was so saturated with cancer that she was better without it until the progress of the disease terminated life fourteen months after the operation. This celebrated operation of Dr. Schlatter, performed on Christmas Day, 1897, led to other successful surgical ventures. About a year later, an Italian, Juan Patrini, a dairyman, of San Mateo County, California, thirty-nine years of age, became an interesting specimen because he, too, lived through the operation of removal of the stomach, and a year later still it was reported that he was eating and keeping well on a mixed diet, including such meats as are generally supposed to be only digested in the stomach. These cases prove positively that the stomach, with its digestive processes, is not indispensable, and that if we could wilfully neglect or ignore it, we might suffer less from so doing than from bolting our food in a way to let it escape the changes of mouth digestion. The possibility of doing without a stomach while still getting the good of meaty foods is, of course, due to the fact that their digestion, even though not begun in the stomach, by the aid of pepsin, can be carried on in the duodenum by the solvent power of the pancreatic juice. The pancreas deserves to have its picture taken for this place, because it is the right-hand man and chief agent in the business of intestinal digestion, and we have seen that this is the one place where all sorts of digestive processes go on. It is the indispensable organ of digestion, and, no doubt, also the seat of most cases of dyspepsia. The pancreas

itself is a soft organ with which many consumers of animal food are familiar, as it is offered under the name of sweetbreads in the market. It is sometimes the seat of cancerous disease, and no doubt it may become, as we say the liver does, sluggish and inactive. When it does, the symptoms may simply be those of intestinal indigestion, due to a deficiency of the strong ferments which it ought to contribute.

## GOOD AND BAD FERMENTS.

A little explanation may be called for here, since the reader may be puzzled, because, on the one hand, fermentation in the place of digestion is regarded as objectionable, while, on the other hand, the useful properties of various digestive fluids are spoken of as ferments.

All these digestive processes, except the emulsifying of fat, are a sort of fermentation, but they are of the right sort, and we prefer to call them digestion. The last verdict of practical experimenting

FIG. 157.



THE PANCREAS

physiologists is that bacteria are and its ducts, through which the pancreatic fluids pass to the duodenum. aiding its ferments. *The Literary Digest* of April 8, 1899, translates from the *Revue Scientifique* the conclusions of Professor Max Schottelius, Professor of Hygiene in the University of Freiburg. His investigations lead him to conclude that the microbic occupants of the intestinal canal play a useful part in digestion, though, he also admits, they may be the cause of temporary derangements or chronic disorders. We may fairly assume that when our own digestive fluids are of the right sort they are aided by the various and numerous low and small forms of life which swarm within the alimentary canal, but when our own secretions are not of the right quality, or when we impose upon our digestive organs a mass of indigestible stuff that is too much for them to manage, then the changes which go on in this warm, moist mixture may develop processes of fermentation which are more deserving the name of rot than of digestion.

With our present understanding of how closely allied are fermentation and digestion, it is evident that we can have no use for "embalmed food." This subject came to the front during the war with Spain about Cuba. In the effort to keep foods of various kinds from spoiling until they could be transported where needed, chemists resorted to such things as salicylic acid, boric acid, and formalin. It was claimed that these articles were harmless because not used in sufficient amount to cause any poisonous or injurious effect, but their use is objectionable because just so far as they are effective in preserving foods from fermentation they prevent as well the process of digestion,



which is the necessary preliminary of assimilation. It has been found that the proteids of milk containing formalin do not yield to the digestive action of pepsin ; so an infant fed upon milk thus preserved would starve for lack of power to get the good of the riches locked up in the milk. Just as leather will not take the place of steak, so meats, milk, and other foods treated with these chemical anti-ferments become preserved against digestion as well as against fermentation, and a food that cannot be digested is no food at all.

Dr. Hill, Health Officer of Birmingham, England, reported in 1899 that during three years' service he found twenty per cent. of the food samples he examined to contain boric acid, salicylic acid, or formic aldehyde. One would think we already had enough causes of indigestion and malnutrition without introducing these new inventions of the chemist, which preserve foods from digestion as well as from decay.

Some interesting facts about the business of the small intestine were learned from the study of a woman sixty-two years of age, who was operated on for strangulated hernia by Professor Kocher, in Berne, Switzerland. It was necessary to cut the small intestine away from the large intestine and make what is called an artificial anus, so that it was possible to examine everything coming from the small intestine at this opening. It was found that the flow of material at this point was continuous, though less in the night hours, and the time required for an article of food to pass through the stomach and intestines was from two to five hours, but some things, green peas for instance, required from fourteen to twenty-three hours before the last portion passed out through the artificial opening. As a rule, this matter was almost odorless, and usually acid. The study of this case further showed that the bulk of digestible food-stuffs is digested and absorbed before reaching the large intestine—probably eighty-five per cent. It would also appear that all the malodorous and excretory business of the intestines occurs in the large gut.

#### SUGGESTIONS FOR TREATMENT.

Those who have been interested in this subject thus far appreciate that the study of digestion is not a simple and easy one, and that practically it is a very complex process. It naturally follows that one case of dyspepsia differs from another to the extent that there are many kinds of indigestion. Therefore, there can be no one remedy suitable for all cases unless it be hygiene. The hygiene of dyspepsia means making one's habits right, but the reform necessary and helpful in one case may not be just what is needed in the next. There can be no objection to these general rules : Do as near right as you know how ; avoid such foods as you find to be hurtful ; simplify your diet ; and insure regular and sufficient elimination. Dr. T. Lauder Brunton



wrote: "It would seem that the vital processes are much more readily arrested by the accumulation of waste products within the organs of the body than by the want of nutriment of the organs themselves." He compared vital functions to processes of combustion, and claimed that people not only put on too much coal, but allowed it to get smothered in ashes. I shall shortly come to the consideration of constipation, but can well say right here that the relief of constipation and the acquiring of a habit of regular, sufficient evacuation of the bowels is one of the first moves for the relief of any sort of indigestion. The use of copious injections of pure water even to the extent of two, three, or four quarts at a time, may be a good way to make a beginning. This could be done every other night for a week or two until all objectionable ferments and fermenting things have been well cleared out. There are cases in which it is well to begin by thoroughly cleansing the stomach itself, giving it a thorough washing out. This is quite possible, but not as easy and agreeable a thing to do as we might wish. It only requires a funnel with a rubber tube five or six feet long, and plenty of warm water. About two feet of this tube must be swallowed or pushed down the œsophagus, and this is a trick at which some folks gag. Many get used to it. Water is easily poured into the stomach, and then it can be siphoned out as illustrated on pages 474 and 475. This can be repeated until the water comes out pretty clear. A spoonful of bicarbonate of soda in a quart of water will expedite the cleansing. Of course, the small intestine, a tube about twenty feet long, cannot be reached and washed out, but in the course of a few days a good deal can be done to clean it by drinking freely of pure water or some moderately alkaline mineral water. I would not have the reader infer that all cases of dyspepsia require such cleansing treatment as I have just described, but there are a good many exceedingly unclean stomachs for which it would be very desirable. The pangs of indigestion, or the "heavy-hearted" stomach may be relieved by various simple expedients—and again they may not—but they are handy and innocent enough to be worth trying. The sipping of hot water not only adds warmth and solvent power to digestion, but the act of sipping probably re-acts through the nerves, causing by reflex action an increased flow of the digestive fluids when they are needed; and chewing-gum no doubt acts much the same way, though, of course, it more directly stimulates the flow of salivary fluids, which, even if supplied *after* the food, may be very helpful, as explained in previous pages.

#### AIDS TO DIGESTION.

A maker of pure vinegar sends me a circular presenting his product as a remedy for dyspepsia, recommending a tablespoonful in

water, sweetened, after each meal. I would not deny that he has found it useful, but whether it is likely to be beneficial or not must depend upon the kind of food eaten. I have already quoted very positive testimony from Dr. Kellogg, showing how such an acid, especially with sweet added, would be decidedly disadvantageous after a meal of starchy or cereal food; but if the food be mainly meat, an acid may work well and aid the stomach digestion. Ordinary apple

FIG. 158.



STOMACH WASHING.

Taking in water.

cider has been similarly used with good effect. In some cases of acid-dyspepsia or heart-burn, the use of acid may be just the thing. The juice of half a lemon or lime in water, before meals (about half an hour before), affords a nice clean acid that kills out the biting, irritating acids of unclean fermentation. My friend's vinegar has no doubt been well employed in such cases, too, but I regard lemon or lime juice as rather cleaner than the vinegar.

On the other hand, there are cases where, either for temporary relief or as a curative measure for steady use, some form of alkaline treatment is more appropriate and successful; but, perhaps, not one remedy has been so much used to excess by dys-

peptics as bicarbonate of soda. In many cases it tends, in the long run, to aggravate and perpetuate the symptoms it at first relieves. To encourage dependence upon its use, instead of reforming the disorders that invite the relief it affords, is bad policy. Too much of a good thing may become a very bad thing, and if this remark had no other application, it would be at least worth printing in large letters in reference to alkalis in dyspepsia.

The right sort of exercise and the time for it, is often no easier to decide than whether acids or alkalis should be preferred. Our domestic animals certainly are quite disposed, after browsing, to coil up comfortably and be cosily quiet, and while this does not prove the wholesomeness of late and hearty dinners near the hour of retiring, a nap

after lunch or a quiet siesta after a light dinner certainly agrees with the digestion as well as the comfort and disposition of many persons. Sometimes the taking of a few teaspoonfuls of food when restless will promote sleep, yet, I have heard some folks claim that they walk off dyspepsia, by long, vigorous, pedestrian exercise right after eating. Such exercise must directly stimulate sluggish blood-circulation in these exceptional cases, and indirectly favor secretion of digestive fluids, if not carried to the point of over-fatigue ; but on general principles I incline to favor only a moderate activity soon after eating, and the more vigorous exercise of the day at such times as digestion of the meals is well advanced. It certainly is not wise, however, to sit down to a hearty dinner when thoroughly exhausted and "fagged out," from any unusual and fatiguing exertion.

Last, but certainly not least, among the non-medicinal means that may be highly recommended for dyspepsia, is rest by fasting. This, of course, applies to those who are full-blooded, and have some stored material which the system can draw upon. Dr. Tanner and others have proved that long fasts of forty

days need not be either fatal or harmful ; and, yet, some have died in following his example. So, here, too, one might make a grave error in getting too much of a good thing, but this is not likely. The tendency is the other way, and the man who overdoes fasting will be a rare one of strong will. The people who need the fasting cure are those of weak will, who are daily tempted to overtax their digestive organs by stuffing or by other errors in diet. Because of defective assimilation, morbid appetite is often a feature of dyspepsia, and must be continually fought off, for crowding the stomach with food cannot relieve the craving until the disorder which occasions it is removed. A limited fast can be generally recommended for any dyspeptic patient. In some cases a complete fast for one, two, or three days, once a month, is a good prescription, using freely of pure water meanwhile ; but even this is too heroic for many dyspeptics, and the most a doctor can cut

FIG. 159.



STOMACH WASHING.  
Siphoning out water.

them down to is a limited fast of two meals a day, or half their usual allowance at each meal, or a long fast from certain kinds of food in which they have over-indulged. Finally, there are cases which may be benefited by the taking of a very little nutritious food once in two or three hours.

The digestibility of foods depends much on their quality and the mode of cooking, and also on how and when they are eaten; but without going into all these complexities, it may be of interest, as well as useful instruction, to give the following list of foods according to their

FIG. 100.



DR. TANNER,  
who fasted for forty days.

digestibility, as given by Hartshorn:

**EASY OF DIGESTION:** Mutton, venison, chicken, beef and mutton broths and milk; fresh fish, such as turbot, sole, haddock, and oysters; rice, tapioca, arrow root, asparagus, and cauliflower; baked apples, oranges, grapes, and peaches.

**MODERATELY DIGESTIBLE:** Beef, lamb, duck, snipe, soups, and eggs; potatoes, beets, turnips, lettuce, and celery; raw apples, bread, puddings, rhubarb, chocolate, and coffee.

**HARD TO DIGEST:** Pork, veal, hard boiled eggs, salt meats, and sausages; salt fish, lobster, herring, salmon, and shrimps; oils, cheese, fresh bread, pastry, cakes, nuts, plums, cherries, cucumbers, onions, carrots, parsnips, and pickles.

While it has been my aim to provide for the average reader about as much information regarding digestion as he can mentally digest and make practically useful to himself, I shall not go farther and attempt to instruct him in the use of medicines for the cure of dyspepsia—or rather of dyspepsias. If there were but one kind, and a few appropriate remedies, I should not despair of advising every dyspeptic how to be his or her own doctor; but I find at present that a great deal of suffering is kept up through the lack of appreciation of the fact that the study of dyspepsia is a difficult one, and the common inclination of one dyspeptic to think that whatever has helped his friend must also be the right thing for him. Even the doctors do not always hit right in the selection of remedies. For instance, I was called upon by a fashionable woman who had long been a sufferer from dyspepsia, and who had had a score or more of doctors; I do not remember how many.

She wanted her case treated in some way without medicine. She said, emphatically: "Medicine can do no good! I have reached a stage, Doctor, where I cannot even retain any kind of medicine!" Not being a Mental or Christian Scientist, I found myself in a perplexing position, and I begged of her to try medicines once more. After much urging she consented. I gave much thought to the case, and taking my time for it, carefully prepared a course of remedies. They appeared to be well chosen, for at her next visit she expressed the greatest surprise that she had found at last remedies that she could not only retain but use with conscious benefit. She patiently pursued the entire treatment recommended, and wholly recovered.

### Constipation.

To properly understand the causes which may produce this common and troublesome difficulty, it is necessary to know the process by which the solid waste matters thrown from the stomach are disposed of. It has already been explained at the beginning of this chapter how the liver, if active, supplies a saponaceous fluid called bile to mix with, soften, and lubricate them. Then, on entering the intestines, there is a worm-like motion, technically called peristaltic action, of these tubes; or, in other words, a contraction of the fibres of the intestines above the matter to be removed, which carries it constantly along. Then at stool the breath is inhaled so as to depress the diaphragm, which produces a pressure downward upon the intestines; and the muscles of the abdomen contract so as to produce pressure in front of them; and it is by this process that the residuum of the food taken into the mouth, and the excrementitious secretions of the colon are cast out of the body. It will be interesting here, if the reader has not already done so, to turn to Fig. 151, and observe the convolutions of the intestines, and the circuitous route which the fæces are compelled to pursue before leaving the system.

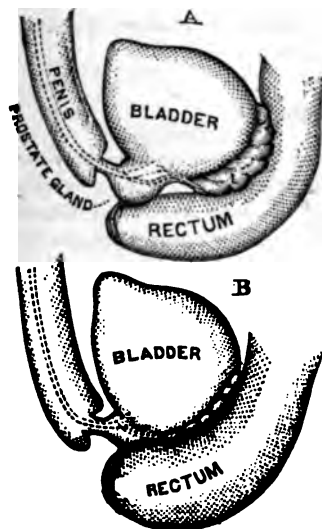
To prevent a blockade, and to encourage the peristaltic action of the intestines; and, in fact, to properly relieve the human machinery of waste matters, every person ought to have a thorough evacuation of the bowels at least once a day. Some very hearty eaters may better have two. If the fæces are dry, and much straining is required for their expulsion, even if the bowels move regularly once a day, the person so affected may very correctly be said to be constipated. Simply this sluggish condition is liable to induce serious derangements, such as falling of the rectum and piles; and, when the blood is in a scrofulous condition, difficult stooling may induce ulceration, abscess, or fistula.

The immediate causes of constipation are: a diseased liver, by which an insufficient supply of saponaceous bile is given to the waste

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substances to soften and lubricate them ; retention of the fæces until their fluidity has been absorbed or evaporated in disagreeable gases ; the use of food that too greatly absorbs the fluids ; the use of astringent food or medicine ; the habitual use of too concentrated nutrition—for there must be bulk as well as true aliment ; over-eating, by which the digestive apparatus and the intestines are unduly distended ; relaxation of the muscular fibres of the intestines, so that they contract feebly ;

FIG. 161.



ILLUSTRATIONS SHOWING HOW THE MALE ORGANS ARE AFFECTED BY CONSTIPATION.

contraction of the respiratory organs by tight-lacing or disease, so that the diaphragm cannot be deeply depressed ; weakness or flabbiness of the abdominal muscles, in consequence of which the bowels can give little or no pressure in front ; and partial or complete paralysis of the rectum, in which case it has not the power to expel substantial fæces. The predisposing causes are usually sedentary habits, which depress the nervous energy and weaken those forces which give activity to the various parts depended upon for the energetic expulsion of the useless solid matters of the system. Blood impurities, in many cases, intercept the nervous forces, and practically produce the same result. Everybody who has ever been affected with constipation is familiar with many of the effects of the crowded, distended feeling of the bowels ; the drowsiness, lassitude, headache, and, in some cases, disagreeable breath and offensive effluvia. But most people are not aware that injury may be inflicted upon the procreative organs of both sexes. For this reason I have had designed and engraved the annexed illustrations, Figs. 161 and 162. The relative location of the rectum and seminal vesicles, and prostate gland, is given in Fig. 161. In the section marked A the seminal vesicles and the prostate gland are exhibited as they appear when they are not crowded by a constipated rectum. The prostate gland is that bulb-like formation just over the anus or mouth of the rectum. The seminal vesicles lie back of the prostate gland between the bladder and rectum. The location of these vesicles may be still better understood by turning over to Fig. 162. Now look at B, in Fig. 161 and see how,



when the rectum is engorged with excrementitious matter, the gland and vesicles are pressed. Unless the person so affected is remarkably strong in these parts there must inevitably be an involuntary exudation of both semen and prostatic fluid. Especially must this be the case at stool when by straining this pressure is aggravated. Then, too, when the anus becomes irritated and inflamed by the straining and friction, that irritation is almost always communicated to the prostate gland and spermatic vessels, producing or greatly aggravating involuntary nocturnal seminal emissions. When pin-worms exist, as they often do in this diseased and engorged condition of the rectum, the itching and tickling caused by the movements of the parasites also predispose the one so affected to involuntary emissions. The serious consequences of these seminal losses are presented in an essay on seminal weakness in a chapter farther on.

Now, let me call your attention to Fig. 162, representing the female organs. The section designated by the letter A presents all the organs in their proper condition—the bladder in front; the vagina next; and the rectum behind. Above the vagina an outline of the womb is given and its cavity dotted out. Below this picture, B represents these same organs when the lower part of the rectum, marked 2, is distended with fecal matter. The cavity of the vagina, it is noticed, is nearly obliterated, and the womb is somewhat pressed above its natural position. This engorgement, in many cases, commences even above the figure 1, and in these instances the womb is pressed downward and forward, and sometimes frightfully displaced. When badly prolapsed, it becomes inflamed, congested, and swollen; and in this condition it retaliates upon the rectum, and to such an extent in some instances as to almost close the canal through which the excrementitious matters pass out. Here is a combination which in its effects is very troublesome. It is most unfortunate for a person of either sex to suffer with this mutual antagonism and crowding of the organs represented in the illustrations given. In health there is space enough for them all, and elbow-room sufficient to enable each to perform its allotted function; but when the rectum or intestines above become engorged with waste

FIG. 162.



ILLUSTRATIONS SHOWING  
HOW THE FEMALE ORGANS  
ARE AFFECTED BY CONSTI-  
PATION.



matter, disorder commences, and a regular family fracas ensues, or a sort of civil war, which in time involves every organ of the system.

In some cases the intestines and upper part of the rectum succeed very well in moving along the waste matters, while the lower part of the rectum is nearly paralyzed. In such persons the blockade takes place at about the point designated by figure 2, in illustration B, representing the female organs. Here a regular fecal plug forms, and in a little time becomes as hard as a rubber ball. The disposition is constantly felt to go to stool, but after repeated failures, in which the rectum is painfully irritated, and the adjoining organs most uncomfortably pressed and strained, the person affected is apt to give up the effort, and turn to cathartics to remove the obstruction; but it is soon discovered that the dissolving effects of the cathartics do not reach the plug at all, while the intestines and their contents above are disagreeably affected by the action of the medicine. When at last the physician or some knowing friend is consulted, an injection of oil, or molasses and water, or something else, to act locally upon the plug, is prescribed. By these means the patient is relieved, and with the removal of the plug there comes a regular freshet of what had been retained above, and changed almost to a scalding mixture by medicine. The parts now smart and burn with irritation; and the sufferer is fortunate if piles do not attack the rectum. As this plug may be easily reached, the better way at the outset, before either medicine or injection is used, is to take to the water-closet a vessel of either sweet or castor oil, or any relaxing ointment, and while making a gentle straining effort, lubricate the rectum well with the oil, and actually pick to pieces the indurated fecal plug. Then look out next time and not go too long without another effort to effect a movement; for this difficulty is not infrequently induced by deferring attention to Nature's call. In some cases, if a strong inclination to evacuate the bowels be disregarded for twenty minutes, this fecal plug will form low down in the rectum, and harden so rapidly, that when an effort is made, it cannot be moved a particle without artificial aid.

Not only may the lower part of the rectum become inactive with the results hereinbefore described, but the outlet may become contracted so that the feces which escape are flat and ribbon-like, or as small as the little finger, and escape with great difficulty. The sphincters which act as gateways at the aboral extremity of the alimentary canal, may become so constricted as to make the expulsion of fecal matters extremely difficult. When such troubles are observed, dilatation of the anal orifice and lower part of the rectum is necessary. Every one should thoroughly wash those parts at least once a day for the sake of cleanliness, and while doing so, if any contractions of the sphincters or the rectum are detected or suspected, the fingers should be well coated with

soap-suds, and one, and then two of them should be introduced their full length, making such movements as will serve to stretch the canal. For this treatment the finger-nails should be closely trimmed so as to cause no lacerations. The stretching of the rectum should be pursued daily while any constipation exists, but may be omitted when the bowels are regular. The ablution of the parts with plenty of soap and water at least once a day, however, should not be neglected. It has been found too, that the stretching of the rectum is beneficial to the general health. Wherever there are external cavities in the human body the nerves pervading the parts come as far as the opening and then loop back, and when from any cause the openings become unduly contracted these loop nerves get pinched and irritated, and by reflex action often involve the entire nervous system. This discovery became the basis of official surgery as introduced by Dr. E. H. Pratt, with much benefit in many nervous affections. In obstinate cases, instruments are used that stretch the rectum, and when this is done the patient is put under the influence of an anæsthetic, for the operation is likely to be painful. For the relief of constipation, digital dilatation as described herein is usually quite sufficient, unless there is some congenital contraction. I would strongly advise all who are troubled with constipation to give attention to this advice.

An inactive liver and obstinate constipation, in many cases, compel Nature to dispose of the bile and waste matters through the excretory pores of the skin. When so expelled, the effluvia of the person are very offensive, and the linen worn next to the skin quickly discolored. If the under garments are worn for a day, they look as if they had been colored by a dyer. Such invalids owe it not less to their companions and friends than to themselves to adopt early and thorough medical treatment. They are a stench in everybody's nostrils, or, in brief, travelling nuisances, which should be speedily cured or abolished. Such persons generally feel pretty comfortable, because Nature manages to dispose of the excrementitious matter. The atmosphere becomes their privy or water-closet, and no one would be surprised at the intuition of the dog in smelling out the tracks of his master, if all individuals were thus diseased.

#### THE TREATMENT OF CONSTIPATION.

In the treatment of constipation, the causes should be ascertained; and so long as the popular mind is so ignorant of the human machinery, a physician should be consulted to avoid mistake. Those wishing to consult the author, can answer the questions on page 761. Before taking this step, however, it is well enough to see what care in regard to diet will effect. It is not uncommon to see persons of constipated habit, make a breakfast of wheat-bread toast, or a luncheon of crackers

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and cheese. These are the worst things that can be eaten in a case of constipation. They will constipate a person in perfect health if eaten to any great extent. Fried and baked potatoes; vegetables and meats cooked brown; fine wheat bread; rice in any form; sweet apples; blackberries, fresh or preserved; and all food and fruit of an astringent quality, are bad for people of costive habit. Among those things which may be used to advantage, are brown, corn, Graham, and rye

FIG. 163.



A DELICIOUS-LOOKING MEDICINE.

bread; wheaten grits, or cracked wheat; hominy; mush; tomatoes; beans; peas; squashes; green corn, fresh or canned; boiled or stewed potatoes; meats cooked rare, etc.

Constipation may often be relieved by relaxing fruits. The *Medical Magazine*, in speaking of the virtues of the grape, remarks as follows: "When in health swallow only the pulp; when the bowels are costive and you wish to relax them, swallow the seeds with the pulp, ejecting the skins; when you wish to check a too-relaxed state of the bowels, swallow the pulp ejecting the seeds, also

masticate the skins well and swallow the astringent juice of them. Thus may the grape be used as a medicine, while at the same time it serves as a laxative, unsurpassed by any other fruit. An adult may eat three or four pounds a day with benefit. It is well to take them with, or immediately after, your regular meals." There is, however, one serious (*very serious*) objection to the advice to swallow the seeds of the grape for constipation, and that is the liability to the lodgement of them in the vermiform appendix, and thus causing appendicitis. This danger was not so well understood when the article in the *Medical Magazine* was written. Either appendicitis is becoming much more frequent, or else, in former years, cases of peritonitis were not correctly diagnosed. I cannot, therefore, recommend the reader to

swallow the seeds. Otherwise the advice is good. The pulp of the grape is doubtless an aid to the digestive processes, and may quite likely assist in helping to relieve constipation. The French say of the grape that "it not only dilutes the thick blood but sends the circulation to the surface, giving color to the pale cheek; that it removes obstructions from the liver and lungs, aids digestion, brings the stomach and bowels into a healthy state, dislodges gravel and calculi from the kidneys, and confers vigor and health upon the debilitated system." All acidulous fruits act favorably in cases of constipation; such, for instance, as sour apples, oranges, lemons, etc.; while figs, though sweet, are relaxing and beneficial. Perfect regularity at stool is essentially necessary to prevent and cure constipation. Fixing the mind upon the function of expelling the feces also aids; while the diversion of the mind in thinking of other matters or in reading greatly retards the free movement of the bowels. When at stool, kneading the bowels with the hands, or pressing and manipulating them, greatly aids in producing an evacuation. This is called abdominal massage, and has been found to be exceedingly beneficial. Not only is kneading of the bowels useful in starting motion to the intestines, but the *danse du ventre*, a religious performance among some of the tribes of the Orient, as the Shaker dance is among the pious followers of Ann Lee, may be resorted to for the purpose of facilitating the passage of excrementitious matter. The muscles of the abdomen may be educated as well as any other muscles of the body and, by practice, the bowels may be made to dance, so to speak, or to move violently in every direction, and to be drawn inward with much force. All this action helps where peristaltic action is dormant. Those who saw the *danse du ventre* at the Midway Plaisance in Chicago, during the great exposition in 1893, were not a little shocked at the Oriental display of what the abdominal muscles could be educated to do; as a public exhibition it was not aesthetically edifying to a cultivated audience, but as a study for the anatomist it did surprisingly show what activity could be put into the abdominal muscles by practice, and it suggested to my mind, at least, how these exercises could be employed for an exceedingly useful purpose. It is a well-known fact that exercise, by jostling the intestines, aids the constipated person in the performance of an important function, and this dance, when one successfully acquires it, gives most effectively to the sluggish intestines the violent shaking up that they obviously require. It is certainly a cure for intestinal stagnation. I have advised it in many cases of obstinate constipation, with the most gratifying results. Furthermore, I think I was the first to discover its hygienic value in this particular.

It is not an easy matter to agitate the bowels with this muscular dance at the first trial. You will find it as difficult as the trick of

FIG. 164.



THE DANSE DU VENTRE.

**This dance calls for very little motion of the legs, but the arms and body sway rhythmically, and the abdominal muscles are every now and then vigorously contracted. It is an exercise or dance of the abdomen and its contents.**

"wagging your ear" if you have never attempted to do that. With a little patience, however, you would acquire the art. Each time you try you will find a little improvement until at last you can arouse just such muscular motion of the abdomen as was displayed, at the exhibition referred to, by the Cairo girls. When at stool, and there is no apparent inclination for a movement of the bowels, set them in motion by the play of the abdominal muscles, as in the *danse du ventre*, and you will be surprised at the result, unless the bowels are in a condition that absolutely requires the most active relaxing medicine.

#### INJECTIONS AND PURGATIVES.

Before dismissing this subject I will offer my views concerning the most common resources for relief of constipation, viz. : injections and purgatives. My advice is, of course, to obtain, if possible merely by resort to hygienic means a regular daily evacuation ; but, I also say, *get it* by any or all means rather than permit yourself to become clogged. The evils of constipation are worse than the most commonly employed means of relief. A correspondent of *The New Voice* tells how he had recourse to Dr. Wilford H. Hall's method of copious injections, using two to four quarts of water at 100° Fahrenheit every other night for a number of years, and that he became quite dependent upon it and very tired of it too. Then he found it possible to abandon it by eating at the commencement of each meal some dry granose ; but, I will add, "Granule" or "Grape Nuts" would do just as well. While I do not think it wise to become dependent upon injections of any kind, or even stimulating suppositories of glycerine, gluten, etc., I know of no actual serious harm done by even long-continued resort to these methods, other than the misfortune of scarcely being able to do without them. The right way—Nature's own—is of course the best ; but some persons seem almost lacking in the normal capacity of effecting regular and sufficient alvine evacuations. Dr. Edward H. Williams, of New York, wrote for the *Medical Record* an article in which he claims that congenital constipation may be one of the "stigmata of degeneracy"—or, one way of being born defective, just as a malformed palate is another way of not being a well-formed human being. I regard it as plausible, even probable. The obstinacy of constipation in some people needs just such a far-reaching explanation to help us to conclude—"well, that must be it !" for the human mind is never satisfied until it knows the reason why of all perplexing problems ; yet, it may be that all constipation is not so much a sign of degeneracy as of a lack of human progression. Even the eye is not a perfect instrument optically, and maybe in the domain of the human intestines there is room for improvement, and that mankind will some day evolve beyond the need of syringes and purgation. A physician who has had abundant oppor-

tunity for studying the diseases of American Indians, believes that constipation is common to the whole human family, regardless of race or color. He found the Indians very much troubled with it. When an Indian feels ill he grunts out "My stomach is bad," and seeks relief by a purgative. This writer says: "This mania for purging which I believe exists among all races, is worthy the consideration of the physician; first, because the idea cannot be of such widespread acceptance and not contain much truth, that a thorough evacuation of the alimentary canal must indeed be beneficial in many ailments; second, that we may intelligently combat the enormous use of purgatives."

An ancient treatise on Hindoo medicines, "Charaka Sambita," tells of six kinds of constipation, and one hundred purgatives for each kind. The evolution of man during four thousand years has not yet lessened the number, for the druggist's shelves carry six hundred laxatives or combinations thereof for satisfying the caprices of customers. While there are at least six kinds of constipation, there is no real need of even one hundred laxatives to choose from, and many could well be discarded for all time; but there will be reasonable and proper use for some of them for a long time to come. In every case that needs them, however, there will be equal need of brains to select the best combination. Many will continue to try them on until they hit it right, as they do in fitting themselves to clothes in a general store; but the eyes deserve more consideration and some skill in selection of the glasses they will do the best with, and this is just about as true in the selection of means for the encouragement and aid of sluggish bowels.

### **Spring Disorders and Loss of Appetite.**

Such are the habits of mankind in those portions of the world called civilized, that almost every man, woman, and child emerges from the winter season with a decided susceptibility to what are commonly denominated "spring disorders," accompanied usually with loss of appetite. The liver is torpid—the skin is sallow—the head feels heavy—sleep is disturbed—the bowels are either constipated or relaxed—the tongue is furred—the digestion is imperfect—and an overpowering sense of lassitude creeps over the whole muscular system, and so affects the mind as to render it restless or inactive. It is true that lassitude to some extent is the inevitable result of the peculiar properties of the atmosphere of spring. The relaxing air which is supplied by Nature for the purpose of swelling and opening the buds of vegetation is such as to relax and weaken to some degree the muscular fibre and lessen mental energy; but this condition is greatly aggravated, and the symptoms before named produced, by bad habits in eating and drinking, and by confined air, during a season when the appetite is sharpened



by frosty air, and warm, illy ventilated apartments are sought for refuge from cold. Overloaded stomachs, late entertainments, artificially warmed and vitiated air, poison the blood, lower the stock of nervous vitality, and thus cripple the motive powers which Nature employs in keeping the vital machinery in healthful activity. The advent of spring, consequently, becomes the harvest of the venders of all sorts of panaceas, for these are resorted to by almost everybody. Nature has spread her green carpet over the grim soil, beautified the woodland with foliage, festooned the arbors with vines, and the birds seem happy. Old Sol looks as if indulging in laughter—and the insects creep from the walls and fences to join in the chorus which seems to issue from the countless throats of animate nature, and the fallow-faced lord of creation cannot understand why he too does not feel in the mood to enjoy the exit of winter and the presence of spring.

His appetite for food is gone, and indeed for everything else. So he takes bitters—not because he knows anything about their properties—but because something must be done; if not bitters, then cathartics; and he fancies they improve him, for bitters are usually stimulating, and cathartics are liable to give him something of a cleaning out. If these remedies be not the best that could be devised for the purpose, they *appear* to afford some relief, and as they can be obtained about as handily as bread, they are swallowed down, *q. s.*

Most of the bitters with which the country is flooded are simply abominable decoctions, with no medicinal property excepting alcohol. If stimulus were wanted, it would be better by far to purchase and use some good brandy, rum, or gin; and if a bitter is desired, steep and add a strong decoction of equal parts of hops and chamomile flowers. But in most cases of spring disorders, stimulants of any kind produce only temporary exhilaration, while the blood is thickened and made worse by them. If they quicken the appetite there is no essential gain, for a good appetite, when the digestive and biliary systems are in a wretched condition, only tends still further to overload the disabled organs. The blood needs cooling and renovating in those who are fleshy, and purifying and enriching in those who are lean. Therefore, bitters are not what Nature requires for spring repairs, and the alcoholic property cheats the drinker by making him feel momentary improvement, while the real sources of weakness and discomfort remain undisturbed.

Cathartics usually act locally upon the contents of the stomach and bowels by dissolving them, and quickening peristaltic action, without in the least stirring up healthful activity of the liver and gall-ducts. Consequently, those who resort to simply purgative or cathartic medicines are only improved by the local unburdening of the stomach and bowels, while the blood and inactive liver remain untouched. The re-

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sult in this case is, no permanent relief, and Nature is left, after all, to help herself as best she can.

The course which ought to be pursued by those who find themselves physically out of order in the spring, is to consult some physician in whom they have confidence. Reliance cannot safely be reposed in the thousand and one blood-purifiers and sarsaparillas which stand in solid battalions on the shelves of the apothecary, nor in the anti-bilious pills, or liver pills, which are advertised in the newspapers. The former are little more than colored sweetened water and alcohol, and the latter possess usually no other than purgative properties. Summer sickness may be prevented by spring renovation, but any hap-hazard attempt at the latter may only the more surely prepare the system for the former. If "a stitch in time saves nine," when applied to our garments, it may apply with equal truth and felicity to the body the garments envelop. But all botch-work should be avoided as the least economical in the end. If you desire any advice from me, answer the questions on page 761. I will be pleased to direct you to a path that will lead to health.

### Chronic Diarrhœa.

Diarrhœa is characterized by frequent thin or watery stools; heat, and sometimes smarting in the bowels; a dragging or downward pressure in the rectum; and, in severe cases, faintness at stool. In the chronic form of the disease, one or more of these symptoms may or may not present themselves prominently. There are those affected with chronic diarrhœa who have but one passage of the bowels per day; but that passage is loose, perhaps watery, and possibly attended with great flatulence. There are other cases in which the bowels move frequently during every twenty-four hours, who experience no other disagreeable symptoms or inconvenience. They seem to feel pretty well, but are compelled to attend to the calls of Nature so frequently as to greatly annoy them, whether indulging in recreation, sociality, or engaging in their usual avocations. Especially will persons thus affected feel an inclination to stool when under any excitement. Then, again, there are those who are alternately relaxed and constipated. For a few days or weeks they are uncomfortably bound up, having no evacuations of the bowels; when suddenly and almost without warning, the flood-gates give way and the excrementitious matters pass off in a softened or fluid form every few hours for a certain length of time.

The causes of chronic diarrhœa are various. In that form last mentioned in the preceding paragraph, the liver remains in a state of stubborn torpidity for a time; then it changes to an activity reversely as excessive, and the bile which has been dammed up in the system pours down the ducts into the lower stomach and bowels, and

dissolves to fluidity the excrementitious matters, and they run off in streams much to the discomfort and annoyance of the invalid, who, while feeling relieved from the heaviness, drowsiness, and fulness of the costive condition, suffers from a sensation of weakness and a bearing down or dragging sensation almost unendurable, together with a scalding or smarting feeling after each stool. The derangement of the liver in these cases proceeds from a want of regular nervous action in that organ, and the disposition of the recuperative powers in some persons to force hepatic action and overcome obstructions when the circulation becomes loaded with bile and the intestines engorged with fecal accumulations.

Diarrhœa may also arise from the blood being so impure as to render the bilious secretions acrimonious and too solvent, in consequence of which the fecal contents of the intestines are rendered watery and irritating to the coatings of the intestinal canal. Sometimes blood-impurities cause eruptions along the lining of this canal, and these eruptions give off a catarrhal secretion, which acts as a solvent and irritant. In persons of a scrofulous diathesis, ulcerations sometimes take place in the bowels, the discharge from which mixes with the fæces, and gives them a diarrhœal consistency. Excessive drugging for liver derangements, constipation, and other difficulties, has often induced intestinal irritation, which in turn has caused chronic diarrhœa. A dyspeptic stomach, which gives rise to great acidity and flatulence, may impart to the waste matters that pass from it undue solvent qualities, and thereby cause diarrhœa. At the close of the great civil war I was consulted by a Union soldier, who received a bullet-wound in the abdomen three years previously, since which time he had been constantly affected with chronic diarrhœa. The ball had been extracted, but irritations remained which caused catarrhal and ulcerous secretions, and sympathetically affected the digestive organs. He was greatly reduced in flesh, and looked as bloodless as one in the last stages of consumption. Notwithstanding, however, the peculiarity of the case, and his repeated failures to get well, under various systems of medication, his difficulty readily yielded to my remedies, which were prepared with reference to the restoration of his blood, and the vitalizing of his wasted nervous system.

In all cases of chronic diarrhœa it will be found that the blood is thin and usually impure. In nearly all cases there are nervous derangements. In a majority of them the liver is out of order; and in not a few cases the stomach is diseased and digestion impaired. It is not well, therefore, to resort simply to astringents. In many cases no more unfortunate result can be obtained than the arrest of the frequent passages while the causes remain undisturbed. The shutting up of this outlet of acrimonious matter by opiates is liable to produce

bilious or other fevers. Still, many imagine that if they can only stop the flux, all will be right with them ; and acting upon this hypothesis, they ply their stomachs and bowels with narcotic or paralyzing drugs, or allow an indiscreet doctor to do it for them. In any case of chronic diarrhœa, if the questions given on page 761 are answered, I can easily ascertain the cause or causes, and by removing that or them, effect a radical cure. All the astringents necessary may be obtained by a proper selection of food. Wheat-bread toast ; cracker-toast ; boiled rice ; rice-gruel ; baked potatoes ; toast prepared with boiled milk ; blackberries, fresh or canned ; baked sweet apples ; grape-pulp, and the juice of the skins, without the seeds ; black currants ; brandy peaches ; wild cherries ; and any other wholesome vegetables and fruits, possessing mild binding qualities. Astringent drinks may also be prepared and used moderately. Rice scorched and prepared in the same way as we prepare the coffee berry ; crust coffee ; toast water ; blackberry-jelly water ; and diluted blackberry brandy are all useful in chronic diarrhœa, if used with sufficient moderation, and not depended upon for effecting a cure.

When there is a chronic tendency to weakness of the bowels and over-action on slight provocation, a dry diet of toast and lamb chops will be a useful occasional resource, and the wearing of a flannel binder about the abdomen will be found very helpful and comforting for constant use ; even day and night in some cases, but such a condition is not likely to be persistent when the blood is right, and the nervous system of good tone. It may be simply a case of persistent indigestion, or it may be from tuberculous invasion of the glands of the intestines, or an expert may discover that the diarrhœa is only symptomatic of some liver or kidney disease. When diarrhœa is persistently chronic, it is wise to advise with one who can accurately diagnose the underlying and hidden causes.

### Hemorrhoids, or Piles.

In introducing this essay, I will first explain that the rectum is the third and last portion of the large intestines, and was so named by the mistaken anatomists of old, under the supposition that this portion of the gut was straight. The illustrations, Figs. 161 and 162, show just about how straight it actually is, and how erroneous it was to christen it after the Latin term *rectus* ! As the name, however, does not give anybody any distress, we will turn our attention to those diseases of the rectum which do.

The most common affection of the rectum and its termination, is piles. All persons subject to constipation, or diarrhœa, are apt to be troubled with piles, and some have them who are not subject to

irregularity of the bowels. Itching piles are those which often present no distinct elevations, but great irritation of the anus and sometimes a puffiness of the surrounding membranes. Then there are cases where an eruption of an itching character breaks out about the anus which may also be called itching piles. The most troublesome piles, however, are those of a tumorous and varicose nature, such as are represented in the annexed illustration, Fig. 165.

The arteries of the rectum are numerous, and whether the enlargements are simply varicose or tumorous, the blood presses in upon the affected parts, and alarming hemorrhages in some cases take place. I once had an interesting case of this kind, who, before becoming my patient, had for more than a year been subject to daily excessive hemorrhages from the rectum, and to such a frightful extent as to give her a death-like paleness, and such weakness that she could with difficulty keep from her bed. Her friends despaired of her recovery after the failure of the family physician to relieve her. She was a Jewess, and her gratitude on being restored under my treatment found expression in the naming of her first-born after the author, who, by invitation, was present at the peculiar ceremony of circumcision. This was all contrary to the canons of the Jewish religion, which forbid the adoption of Christian names, and prohibit religious fellowship with those outside their fold. But she insisted that Dr. F. had saved her life, that the baby was the offspring of her recovery, and the opposition of friends to the course she chose to pursue did not prevail.

The *immediate* cause of piles may be briefly given as everything which tends to irritate or unduly heat the anus or rectum. Hard fecal plugs, and watery and scalding stools may induce an attack of piles. Considering the vascularity of the rectum, it is frightful to think of a large dry fecal plug, as hard and irregular as a stone, descending the rectum, scratching and pushing along, abrading the lining in one place, and so distending it in another that the blood actually exudes from the congested membrane. But there are those who are so ignorant of the peculiar structure of the rectum that they allow constipation to produce these fecal plugs which are thrown off every few days for weeks and months, until the most obstinate diseases of the rectum are induced,

FIG. 165.



TUMOROUS AND VARICOSE PILES AS THEY APPEAR IN THE ANUS.

A, anal rim or sphincter muscle, which holds the tumors tightly after they are extended; B, piles formed of swollen mucous membrane and enlarged vessels; C, anal aperture.

Carelessness in the selection of instruments for cleansing the parts after stool often induces irritation which develops piles. This evil is so excessively prevalent, particularly in rural districts, that I must beg the indulgence of the reader for a moment while I call attention to it. Nothing is more common than to find in the "little-house" of a farm-yard, a huge pile of corn-cobs for the purpose indicated. Even chips are sometimes resorted to. Now, to frictionize the external skin with a harsh substance like either of those, would be sufficient to produce eruptions or sores upon anyone affected with blood impurities; but applied to the delicate membrane of the anus, no one addicted to the practice can escape having piles unless his blood is remarkably pure. Leaves of plants are often used with like results. The leaves of almost all descriptions of vegetation are more or less bearded or coated with a kind of fuzz which, when brought in contact with the mucous membrane, causes irritation. Coarse brown paper is nearly as unsuitable, inasmuch as it is too rough and harsh, while a newspaper is equally objectionable, because of the irritating properties of the ink with which it is printed.

It would be well if all would regard this matter of sufficient importance to provide themselves with paper which is manufactured and sold expressly for the purpose. If not, only the softest and most pliable brown paper, such as would answer to wipe the mouth or nose in the absence of a handkerchief, should be employed.

People of sedentary habits should also be guarded as to what they use for seats. Sitting in cushioned chairs covered with worsted, enamelled cloth, or other heating material, tends to produce irritation in the anus. If a person is at all predisposed to piles, cane-seated chairs are far preferable to any other, and a wood-bottomed chair is decidedly better than one that is luxuriously upholstered.

The anatomical relation of the blood-vessels of the rectum to the liver is such that the return flow of blood from the hemorrhoidal veins at the rectum or anus is obstructed when the liver is congested, and therefore liver torpor is the most common cause of the engorgement and swelling of the veins which constitute pile tumors. It is seldom possible to do much for permanent relief of piles without giving due attention to the liver, and relieving the torpid state of circulation there which dams back the blood into the veins below, at the rectum. Local treatment, whether medicinal or surgical, is not likely to be truly curative. Soothing ointments (particularly my Magnetic Ointment No. 1, and Pine Cones, No. 0 of Sanitary Bureau list) will give great relief from soreness, heat, and the results of chafing, and for a time seem to cure; and the various operations by knife, clamps, and cautery will, of course, at once destroy the piles thus treated, but the veins there are numerous, tortuous, and lengthy, so that after a few pile tumors



have been removed, if the cause is not, another lot is likely to be produced. Some cases are so severe as to call for very prompt relief by the aid of surgery, and some of the most successful operations are done without any pain to speak of, but unless constitutional treatment be at once adopted for removal of causes, there may soon be another call for operation. On the other hand, if the patient can bear his discomfort a little longer, the right sort of constitutional treatment, combined with soothing and astringent local applications, will often do wonders in the way of reducing large, protruding, and bleeding piles, and render any sort of surgical operation unnecessary. Piles that bleed enough to gradually impair the general health, and weaken sexual vigor in course of time, do not always protrude and cause soreness and chafing. Their main annoyance is from bleeding at stool, and perhaps some pain then, and these may not be enough to compel due attention to proper treatment, but it is unwise to neglect it.

The most skilful treatment, however, is liable to fail in any case, unless proper attention is paid to personal habits. I have already spoken of constipation, and advised means for overcoming the difficulty, in an essay devoted to that subject; but the importance of avoiding a constipated condition of the bowels is so essential to success in removing hemorrhoidal affections, I must be pardoned for introducing matter here which may almost seem like repetition. First, and all-important, after giving attention to dietetic rules, is regularity in attending to the calls of Nature. Every man, woman, and child should have a stated hour, from which he or she should reluctantly deviate if the house is on fire. Persons accustoming the bowels to move at a certain time each day will find that organ ready to respond to his or her efforts, and they will further find that if they pass much beyond the usual time, constipation will exhibit itself.

The habit many have, of reading or thinking intently on business or domestic affairs, of nursing griefs and taking a retrospect of a gloomy past, or, in fact, of engaging the mind either in reflection or diversion, while at stool, tends to retard the bowels in the exercise of their functions, and consequently produces constipation. The *Harbinger of Health* very sensibly gives utterance to the following language on the subject: "Any mental occupation foreign to the proper and prompt performance of the function is positively certain to stamp the impress of disease upon the weakest part; and, inasmuch as, while engaged in this particular function, the vessels and fibres of the rectum are distended and principally taxed, so is inattention at the time most likely to produce one or more of the above-mentioned forms of hemorrhoidal disturbances." By concentrating the will upon the parts which expel the feces, costive persons will find it much easier to relieve themselves of excrementitious matter.



abrasions or abscesses ; or it may be caused by indolent tumors forming therein, or remaining after a severe attack of piles. Stricture of the rectum is a most troublesome difficulty, because it obstructs the passage of the excrementitious matter, and in some cases to such a degree as to prove fatal. The symptoms attending stricture in this locality are—difficulty in passing fæces even when they are soft and pliable ; passage of fæces in small fragments, sometimes streaked with blood ; and, when caused by thickening of the walls of the rectum, the expulsion of narrow flattened fæces. Here is something which may be especially benefited by daily resort to digital stretching of the lower part of the rectum. In some obstinate cases it will be necessary to resort to instrumental dilatation, in which case the services of a physician will be required ; but, with many, it will be sufficient to first thoroughly cleanse the parts with soap and water, and then, employing my ointment or some other oleaginous preparation possessing properties favoring relaxation, lubricate one finger and introduce that ; after enlarging the parts as much as possible with one, lubricate and introduce the second finger in addition, and make such movements with the two fingers as will tend to stretch the constricted parts. In obstinate cases which resist self-applied official surgery, both constitutional and local treatment are necessary, and the patient cannot do better than to rely wholly upon the advice of the physician in whom he may entertain confidence. In cases living at a distance, the author can give such directions as will enable the patient to administer the necessary local treatment himself, or herself.

#### **Fistula-in-Ano**

Is a troublesome and dangerous affection, which is liable to result from neglected or badly treated piles. It may also occur in persons of scrofulous diathesis without the provocation of any previous disease in the anus or rectum. It commences not far from the anus, and usually announces its approach by itching, or pain, or uneasiness, although in some cases no unpleasant symptom is experienced until it begins to discharge its purulent matter, and then this discharge may be the only evidence of its existence. So long as it has but one opening it is called incomplete, but when the abscess has proceeded so far as to penetrate the rectum, or any other cavity, it is said to be complete. The annexed cuts, Figs. 167, 168, represent a complete fistula-in-ano. Sometimes it has several openings into the rectum or other parts, and the canal is in some cases so complete as to have a lining almost like the mucous membrane. I once had a case of fistula which opened perfect communication between the rectum and the urethra, so that at stool some of the fluid portion of the fæces passed out of the mouth of the penis. When the abscess is active, large quantities of purulent matter issue

therefrom, especially at stool when it is pressed by the descending faeces. When much inflammation is present the affection is terribly painful.

In most cases of fistula, the blood should receive the first attention of the physician, and the knife should be the last resort, because if the latter be employed, it still remains necessary to purify the blood, or the fistula, or an abscess of some kind will be likely to return. It would consequently seem the more sensible plan, in all cases, to have suitable blood-treatment at the outset. This may suffice to cure the

Fig. 107.



COMPLETE FISTULA-IN-ANO.

The fistulous canal is observed in the right side of the rectum.

Fig. 108.



SURGICAL EXAMINATION.

Discovering or proving fistula by examination.

difficulty. If it does not, neither time nor money will have been unnecessarily wasted, because the constitutional treatment cannot be safely dispensed with, however successful the operation, and many cases are not in fit condition to make good recovery without a course of preparatory, purifying treatment. When the patient is fit for operation, it need not be feared, as there is no danger from it, and the result is almost sure to be entirely satisfactory.

#### Fissure of the Anus.

Ulcerations are liable to take place in any part of the body when anything like a scrofulous or a syphilitic taint exists in the system. Chronic ulcer of the stomach is perhaps more frequent than ulceration of the bowels, but the most common, if least serious, ulcer occurs at the anus, and is quite analogous to a "crack in the lip" of the mouth. It is called "anal fissure," and is painful out of all proportion to its size, the pain being sharp and severe during stooling, and continuing long after. Bleeding may occur with it. It is practically incurable while constipation lasts, owing to the wear and tear of its situation,

and even when the bowels move comfortably it is often obstinate. Anodyne ointments relieve; lunar caustic touching stimulates healing action; a knife operation is sometimes necessary; but with this, as in cases of ulceration elsewhere, there is a fault in the blood which must be corrected to encourage Nature's own reparative processes.

Another very distressing disease of this part, often with very little to show for it, but generally due to more or less local eczema, is obstinate itching, or *pruritus-ani*, which may either disturb sleep at night or make its victim uneasy all day. It is due to either the visible, local lesion, to irritating (unnatural) secretions from the intestines, or worms, or in some cases it seems to be purely nervous. All these anal troubles may be considerably relieved by appropriate local treatment, but removal of the particular cause in each case is the only means of permanent relief. The lower bowel being the slop-bucket of the body, receives its worst or most noxious substances, and yet, in health, fecal waste is not really irritating to the parts that must contain it and retain it for awhile; but in disease, or as a result of various and numerous disorders anywhere along the route of the stomach and bowels, the fecal evacuation may become even excoriating. The membranes at the outlet may be only tickled to the point of persistent itching, or they may be scalded, excoriated, and lacerated. So once more we learn that the art of health from mouth to the extremity of the alimentary canal, consists mainly in learning to keep clean all through; that there is such a thing as "clean dirt," even in fecal parlance; and that unclean, diseased, and acrid discharges from above are what initiate rectal diseases.

#### Intestinal Parasites.

It is not pleasant to think of, but the fact is that men, as well as animals, are prone to be wormy, and the number and variety of parasites that find a home along the course of the alimentary canal is almost legion; but the common forms that most folks need to know something about are the long, round worms, the little pinworms, and several kinds of curious tape-worms. If adults and children would be more particular about what they eat and drink, there would be far less complaint on account of worms. If all maintained a first-class digestion, and clean blood and secretions, these internal vermin would have less opportunity to take up their abode and thrive and breed. Chapter XIII. of Part II. gives some good formulæ for routing them out. Injections of salt and water, quassia water or sweet oil are useful in drowning out pin-worms, but they are very persistent, and the victim must be more so. Be sure you are right before you go ahead. Parents sometimes think a child has worms because of colicky pains, poor

appetite, bad breath, itching about the anus, or grinding of the teeth ; but "seeing is believing," and a cathartic dose with observation of results should be tried before further specific dosing against worms. The ordinary round worm, common to children of four to twelve years, is easily seen, it being from a few inches to a foot long, and of a yellowish white color. Thread-worms are much smaller, so that they are often called pin-worms, being only half an inch long or less, and not much larger around than a pin, but they are more annoying than the larger sort. They congregate in masses in the rectum and titillate the nerves of the anus, making it feel as if it had become a nest for hornets. Local injections may or may not be all that is required to rout them, but these must be employed persistently for two or three weeks. Occasional laxative dosing is likely to be needed to drive them down and out, and a small teaspoonful of turpentine in a cup of milk, given an hour after breakfast, may be necessary to make their home in the bowels unattractive.

As to tape-worms, a book as large as this would be required to tell all that is known of the various kinds ; but the man who has one generally seems to want to know nothing of his tenant except how to be well rid of him and her—for it is hermaphrodite. A recipe for cooking a hare started out with "First catch the hare;" and so, before beginning to take medicine to dislodge a tape-worm, it is wise to catch enough of one to prove its presence. It is produced in sections, or joints, which may prolong it to a length of forty feet, and these break off, and come away separately or in ribbons. A single large joint is an inch long by a quarter of an inch wide, slimy, soft, and white, but without head or tail. A few such captures are enough to make a diagnosis, but many persons with bowel disturbances and "queer rumblings," or "gnawing feelings," have the notion that they have tape-worm instead of having the thing itself. Dyspepsia and bowel irritations of the ordinary kind are aggravated by the rather severe dosing necessary to dislodge a tape-worm, and the treatment should be avoided except where really required. Tape-worms are provided with a wonderful arrangement of suckers or hooks about the head, which enable them to hold on for "dear life" (no doubt life is dear to them), and so long as the head clings to the lining membrane of the human intestine,

FIG. 169.



MAGNIFIED HEAD OF TAPE-WORM.

it can go on producing "sections" and piecing itself out. So the passing away of parts day after day means little loss to the worm—that's his business—and little gain to the patient—who grows impatient. To sunder these relations of house-owner and tenant requires a dose of something that will paralyze Mr. *Tænia*—knock him senseless—and then a brisk cathartic to sweep head and tail all out in one fell swoop. If it happens to be truly *tænia solium* (solitary), nothing remains to be done but repair the damages to the premises by a suitable course of treatment; but there are some people who provide quarters for two or more such tenants, and more than one writ of ejectment may be necessary. Anyone afflicted with a troublesome customer of this kind, or with some obstinate disease of the class treated of in this chapter, may consult the author in person or by letter, and further information or advice will be cordially given.

### Hernia or Rupture.

Hernia is an affliction so prevalent (some estimate one in every ten has it) and so lasting that it deserves some consideration in this volume. There is no more fitting place for this than in the chapter relating to Diseases of the Bowels. It is a weakness and giving way of the abdominal wall somewhere at one of its least well protected spots, and not a disease unless the intestines which protrude through the opening become pinched. The abdominal wall in front is made up of fibrous and muscular layers, but there are a few small, necessary openings which are generally snug or close fitting about the cords or vessels that pass through them; it is when these become over-stretched and permit the slipping out of a piece of intestine that a hernia occurs. There is seldom any real rupture of tissues, but rather a spreading as when a pencil is poked through some loose-knit fabric. Hernia is generally the result of some sudden accident or excessive strain, but in persons of relaxed fibre, loose-knit sort of folks, or those who have suffered recent illness, and so lack firmness, mere coughing, straining at stool, a mis-step, or other minor cause may suffice to drive a wedge of intestine through the weak spot, and so start a hernia. Hard workers are apt to have very strong abdominal walls, but an unusually heavy lift or unexpected effort may "rupture" them, and render them unfit for the occupation they have long filled. In just the other type of person, who has been too weakly or lazy to do physical work, hernia may just come on without apparent cause. In infants a colic, cough, or fall may produce hernial protrusion before the parts have become adjusted to bear even a slight strain, but many a case in infants will soon be "naturally cured" if the swelling is kept well pressed back, and great care taken to prevent its recurrence. A thick skein of yarn bound round the abdomen, with a

knot in it over the weak spot, and a branch between the legs to hold it well in place has sufficed to hold many an infant or child. Some will need a small truss for a year or so.

It is not easy to make plain to the general reader just how hernia occurs, but some years ago a writer of *Health Talks* for the Orange Judd *Farmer* accomplished this as well as it is likely to be done, and I shall offer here his description and illustrations because I could not hope to do better.

"Hernia (from the Greek word, 'ernos or hernos, a 'branch,' or a shooting forth) means a protrusion of internal organs through the wall of the abdomen. 'Rupture' literally means a breaking or tearing. The popular idea that hernia is caused by accidental 'rupture' is erroneous; there are very few cases which are due to external accident. To make the subject clear, we have prepared some special engravings, which the reader should carefully study along with the explanations under each figure.

"Fig. 170 shows at *II*, *FF* and *N* the location of five *natural* openings outward through the wall of the abdomen. *N* and *II* are directly *over* the interior opening. *FF* are the outer openings (under the skin) of *II*. *F* and *F* are two exterior openings under the skin at the top of the thighs, of which the interior openings into the abdomen (not shown) are deep-seated and higher up. The canal or tube between *I* and *E* is  $1\frac{1}{2}$  to 2 inches long. Its course, etc., are shown and explained in Fig. 171. *FF* are alike on the right and left side, as are *II* and *EE*, and a description of one of each answers for both.

"Through the canal extending from *F* back into the abdomen comes down the great artery which supplies blood to the whole lower limb. **IMPORTANT NOTE.**—If an artery anywhere in the leg or foot be cut or broken the dangerous escape of blood can be almost entirely stopped by simply applying strong pressure at *F*.

"The large vein carrying the blood from the limb to the heart also goes up through the same canal, which extends back and upward from *F*.

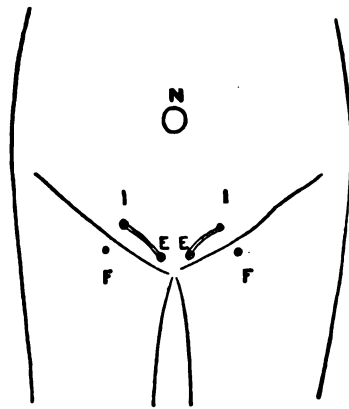
"In like manner, arteries and veins, nerves, cords, etc., connected with reproduction, pass through the canal between *I* and *E*.

"*N* is the fifth natural opening from the abdomen. It is through this umbilicus that the unborn animal receives its blood and entire nourishment. It is usually closed, but it is sometimes the source of serious trouble—frequently so in infancy, and quite often among fleshy persons.

"Fig. 171 is a side or sectional view of the abdomen *A* with a portion of the intestines *In*. We also see the front wall, including the muscular tissue *M*, the outer skin *S*, the Peritoneum *P*, which latter is a thin membrane, smooth on the inside where the intestines move

against it. (The terrible affliction known as 'Peritonitis' is an inflammation of this Peritoneum *P*.) This coating is quite elastic and capable of large expansion, as we shall see. The 'Inguinal Canal,' or tube, described in Fig. 170, extending from *I* to *E*, is also shown in Fig. 171 at *T*. This canal is the seat of the larger portion of Hernias, or 'Ruptures' It runs from its upper inside opening, but outside of the Peritoneum, down obliquely among the muscles *M, M*, to its lower opening under the skin at *E*, Fig. 170. This canal is usually large enough in

FIG. 170.



WHERE HERNIAS OCCUR.

adults to admit the finger up through most of its length. The inguinal canal, while carrying through it the arteries, veins, etc., described under Fig. 170, is ordinarily kept closed around them by the weight of the intestines inside, and the resistance of the outer muscles of *M, M*.

Fig. 172 shows the same parts as Fig. 171; but illustrates the beginning of a *Hernia*, in which, owing to a weakness of the muscular coating *M, M*, or to extraordinary pressure of the intestines, *In*, or both, the intestines begin to push the elastic peritoneum *into* the upper mouth of the canal *T*, and to act as a

wedge to enlarge the canal. The peritoneum itself is so expansible that it does not resist the intrusion of the intestine into the canal.

Fig. 173 shows progress from Fig. 172. The intestine has pushed farther down, enlarging *T*.

Fig. 174 shows still further progress. Here a whole *loop* of the intestines has forced its way down the canal, but is still almost invisible on the outside of the abdomen. The progress, thus far, may have taken months, or even years, or it may have occurred in a few weeks or days, or in a few hours, if the muscular coat *M* is weak and debilitated, or if there is extraordinary pressure *from* the *inside*, by violent coughing, by jumping or stepping down and coming to a sudden stop, and by violent strains in a variety of ways. The injection of the intestine can be discovered by a physician, or by a person of ordinary skill, on thrusting the finger *up* the canal from below.

Ordinarily no severe pain will be felt except when the loop of the intestine is so pinched by the upper end of the canal, or so filled with hard food or gas that there is not free circulation through the loop.



Hence, a hernia may have made considerable progress before the person affected is aware of its existence, either by marked external swelling, or by recognized pain from it.

"Fig. 175. COMPLETED HERNIA.—This shows the onward progress of the intestine which, while between *I* and *E* in Figs. 170, 171, 172, 173, 174, 175, and 176, was called an 'Incomplete Hernia.' Referring to Fig. 175 it has passed through *E* and below, and is now visible on the outside, pushing the skin outward, forming a tumor or lump. At first it

FIG. 171.

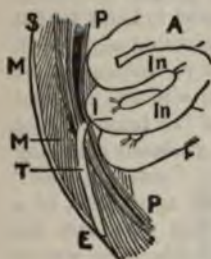


FIG. 172.



FIG. 173.

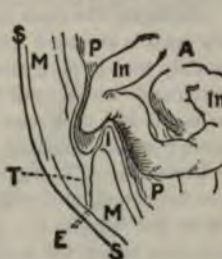


FIG. 174.



FIG. 175.



FIG. 176.



#### ILLUSTRATING PROGRESSIVE HERNIA.

is perhaps the size of a walnut or less, but if not arrested may go on to enormous proportions, up to the size of an egg, a pint, a gallon, indeed to almost inconceivable dimensions. Cases are reported where almost the entire viscera or bowels have passed into the hernial sac.

"Fig. 176. UMBILICAL HERNIA, of large proportions. (Side or sectional view.)—After what is said of the previous figures, little explanation is needed here. Beginning, as in Fig. 172, the Intestine (*In*) has gradually enlarged the naturally small navel aperture, steadily pushing the peritoneum before it, and stretching the muscular coating *M*, outward, and a loop of it has got through the originally small opening."

## INCONVENIENCE AND DANGER.

When the completed stage is reached, there is usually both a disagreeable pain and the inconvenience of the outside enlargement and its weight, and also the constant danger of further growth, and especially of "strangulation," as it is termed, that is, the pinching of the aperture *I*, so as to prevent the return of the intestine, or of its contents, the hardening of the faeces or food in the protruding loop of the bowel, etc. The result is inflammation and fatal mortification of the bowel, unless well-directed, competent surgical skill succeeds in affording relief.

Probably the most important fact for the ruptured to know is that their state is attended with great risk, if neglected, and that neglect will certainly lead to its getting worse. From the start its tendency is to stretch and extend until the intestine may reach the scrotum, and that become as big as a man's head, for the weight of the intestine is of course pushing, pressing, wedging, distending, and gradually enlarging the hernial sac. In no human strain of tissue is the "stitch in time" more important, and that stitch consists in the early application of a dam to the breach, *i.e.*, some mechanical support that will brace the weak spot where the protrusion starts and hold it back. One who is content to let his rupture hold itself may any day have one more unexpected strain that will suddenly crowd more of the gut into the narrow channel, and thus bring it to a state of strangulation that may be fatal.

The treatment of hernia is reduced to two methods—an operation to tighten the slack part, or a truss to brace it. Various operations have been employed with varying success. The last and highest claim is a cure of eighty per cent. in private practice, by the insistence upon the use of a truss for several months after the operation, till its results can be confirmed by time. Such cure really results from new tissue brought to the part by inflammatory action, and the natural tendency of scar tissue to contract. The same process of cure is accomplished in a slower, and equally sure or successful way, by wearing a truss-pad that will produce deep soreness, in fact a slight grade of inflammation, which in time, say a year, repairs the breach. The rubber-cure pad which I have tested and sold for many years was devised upon this theory, and has practically proved a success in a large number of cases, and the proportion of cures would be far larger if subjects would use it religiously as directed instead of recklessly to suit their convenience. Further information regarding this method may be found in my dime pamphlet on Rupture. (See last page.)

Other surgeons acknowledge the "spontaneous" cure of rupture after years of wearing of various trusses, but the chances of cure are greatly increased by the use of one specially devised for this mode of cure. Some pads would always tend to prevent rather than promote a

cure. It is only inguinal hernia *I H* that is thus curable ; the femoral *F*, and umbilical kinds will always require continued support.

Some denounce trusses, and offer "appliances" or elastic bands. The simple fact is the bracing pad must be retained in place effectively, and the subject may choose the means that is most comfortable while accomplishing this object. The first truss a man wears will pretty surely get liberal abuse from him, and only after trying several may he discover that after all the first was the best—or, may be some other. The ruptured person is more comfortable and safe with a well-fitting truss than without, but he cannot be as comfortable as when he had no use for it.



OPERATION FOR RELIEF OF STRANGULATED HERNIA, WHICH BECOMES NECESSARY WHEN THE INTESTINE GETS PINCHED AND CANNOT BE RETURNED BY MANIPULATION.

## CHAPTER V.

### CHRONIC AFFECTIONS OF THE URINARY ORGANS.

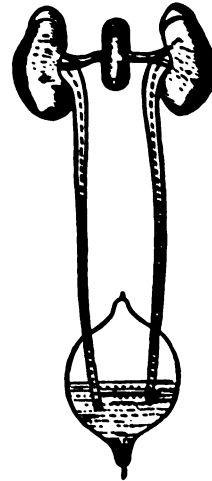


**W**HEN the skin and lungs are in a healthy condition, a large amount of the waste fluids of the system pass off in the form of sensible or insensible perspiration, and in vapors exhaled, but the excretory pores and lungs would be quite insufficient, unaided, to dispose of all the soluble effete matters in the more complex organisms, and hence we find in the human body, and in the bodies of all vertebrates, organs called the kidneys, together with other helping organs which have been named by anatomists the ureters, bladder, and urethra, to act subordinately to them. The kidneys in the human system are brownish red, bean-shaped glands, located on either side of the spine in what is denominated the lumbar region. They are largely made up of tubes and cells and of membrane of so thin a texture, that as the blood passes through the kidneys, the watery portions pass through the membrane as readily as water passes through muslin, and it then trickles down through tubes to little reservoirs in the kidneys, and from thence through the little canals called the ureters to the bladder, which is the great receiving reservoir of the urine. In health the bladder retains the water till it becomes full, or until it is convenient to dispose of it. In both sexes the bladder is located in the lower part of the bowels. In men it is bounded at the back by the seminal vesicles and rectum, and in women by the vagina. In front it lies just back of the lower abdominal walls. The bladder empties itself through the urethra, which in the male extends along the under part of the penis to the orifice at the end, and this same urethra is the conducting pipe of the seminal fluids when they pass off. In the female it performs only the office of carrying off the urine; it is very short and terminates just above the vaginal orifice.

In my practice I have a large percentage of cases suffering with diseases of a chronic nature, located in some part of the urinary apparatus. So closely connected, anatomically, are the urinary with the procreative organs, and so greatly are the latter abused, it is not surprising that the former are frequently the seat of painful and dangerous affections. In both sexes the amative passions are prematurely developed and stimulated. These, at an early age, too often lead boys and girls into private vices, and the mature and married into sexual excesses and pernicious modes for the prevention of conception, all of which physical violations are well calculated to disturb the nervous harmony of the parts, impoverish and vitiate the blood, and to lay the foundation for serious derangements of those organs which secrete and discharge the urine. The most common of these diseases are: Chronic inflammation in the kidneys; weakness in the kidneys; consumption of the kidneys; stone in the kidneys; chronic inflammation in the bladder; paralysis of the bladder; gravel; chronic gonorrhœa; stricture of the urethra, etc.

The office of the kidneys is to secrete the useless alkaline and calcareous particles and the soluble waste matters from the blood. The bladder, as before remarked, is the reservoir for these, and the urethra is the waste-pipe for carrying them off. Everybody living in houses supplied with aqueduct water knows how much trouble it gives the kitchen-maid when something, by her own carelessness, obstructs the waste-pipe. Now, old dame Nature has double the trouble of any "Bridget" in keeping human water-pipes in order, not from any dereliction of duty on her part, but from the carelessness and imprudences of man and woman kind generally. Mechanical water-pipes could never endure the abuses which are almost daily inflicted by men, women, and children, on those organs made in part, by the economy of Nature, for the purpose of carrying off the waste fluids which must be in some way disposed of, and which, if obstructed or dammed back, give rise to a variety of most painful and serious disorders.

FIG. 177.



THE HUMAN WATER-WORKS.

The kidneys at the top are connected by canals called the ureters leading to the bladder. The neck of the bladder connects with the urethra, which is not given in the illustration, as the latter is without sex and stands to represent the urinary organs of both sexes.

## 508 CHRONIC AFFECTIONS OF THE URINARY ORGANS.

Albeit, it is useless to moralize, even in this quaint way. Generation after generation passes off the stage of life, one profiting little by the experience of its predecessor. Individuals suffering with such troubles only intrust the secret to their physician, and the mass of humanity goes recklessly on, vainly thinking that this first, second, or third abuse of the delicate urino-genital structure will not be followed with a penalty, until a large proportion of all have at last tasted the bitter cup, while some drink it to the dregs. It is, therefore, waste of words for the medical writer to do more than point out the dangerous shoals and breakers, and then turn his attention to those already wrecked, and who are too often catching at straws to save themselves. I will, therefore, pass to the consideration of some of the diseases I have adverted to.

### Diseases of the Kidneys.

The kidneys are very vascular organs, and are so arranged anatomically that they receive constantly a large amount of blood which, in passing through them, is purified of many forms of waste matter and deprived of much of its water, the latter being necessary to hold the impurities in solution until they may be cast out from the body. The kidneys are therefore in intimate relation with the circulatory system, the heart and blood-vessels, and they not only suffer when disease invades the heart and arteries, but if the kidneys become first affected, the circulatory system is, sooner or later, weakened also. The kidneys are also sensitive to any faults in digestion, whether in stomach or liver, for if any unusual amount of impurities is thrown into the blood through faulty digestion, the kidneys are put to extra strain in eliminating them. On the other hand, if through disease of the kidneys, the blood fails to be steadily and sufficiently purified, the retained impurities are likely to irritate the digestive organs and derange their action. They stand in equally intimate relations with the lungs and skin.

Therefore the indications of kidney disease are generally roundabout, indirect sort of symptoms affecting other parts. They are too deeply situated to be seen or felt, and are not in themselves very sensitive. Even cancer may eat them up without causing pain, and the back-aches which people so commonly attribute to kidney troubles are generally in the tenderloin muscles of the back, and not in the kidneys themselves, though it may be their sluggish action which causes the accumulation of irritants that render the muscles painful, as in lumbago.

### BRIGHT'S DISEASE.

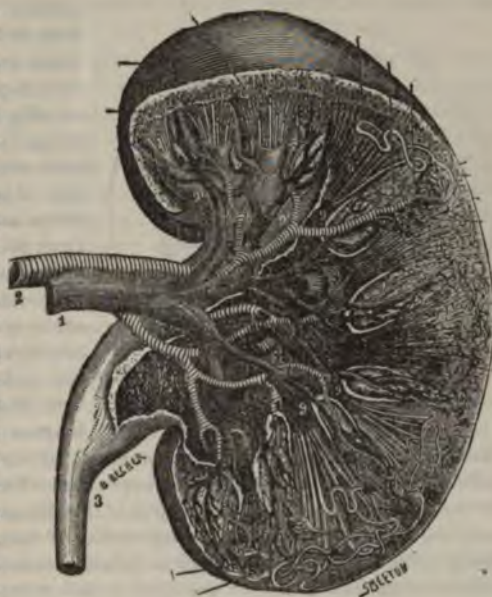
It is hardly to be doubted that the kidneys, like other important organs, may be functionally disordered, or slow and inefficient in their

action, without being actually diseased with what is called an organic lesion, and, like other parts, they may be subject to sudden congestion from "colds," rendering them for a time practically of little use; but it is also true that repeated attacks of congestion are liable to impair the substance of the kidneys, and bring on a chronic form of inflammation known as Bright's disease. This is the most common form of chronic disease of the kidneys, named after Dr. Richard Bright, of England, who first gave a fair description of its symptoms and lesions in 1830, but it is only since 1860 that it has been thoroughly studied and understood, even by physicians, and perhaps only during the latter part of the nineteenth century that the general public learned, through familiarity, to fear it.

It is the most insidious form of chronic disease, and may be far advanced before any symptom develops by which its presence could be suspected. Many a man who dies suddenly of apoplexy, in seeming fair health, has really had, for years preceding that event,

a slow fever in the kidneys, and disintegration of the blood-vessels of the brain where the fatal break at last occurred. Dr. Francis M. Delafield once reported the case of a policeman who had passed a critical physical examination for promotion with a rating of ninety points, only three months before his death by inflammation of the bowels, when the post-mortem examination showed his kidneys greatly wasted by chronic nephritis—another name for Bright's disease. It could not be learned from his friends that he had ever complained of

FIG. 178.



THE KIDNEY CUT THROUGH.

1, vein; 2, artery; 3, ureter, leading to bladder.



## 510 CHRONIC AFFECTIONS OF THE URINARY ORGANS.

its ordinary symptoms. While such reports are not rare, the disease as a rule offers plenty of warning in a variety of symptoms, the real meaning and importance of which must be determined by taking one thing with another.

The ordinary symptoms are those common to many other chronic diseases originating from general debility or blood impurity. Among the early symptoms are apt to be simple indigestion and much flatulence, sometimes with nausea or vertigo and persistent headaches; or there may be only a gouty joint, sciatic rheumatism, or facial neuralgia

Fig. 179.



KIDNEY CASTS.

as evidence of retained waste matters. Sometimes the latter only tickle the surface, but when thus operating in the skin they may cause most distressing itching. There may be pale and numb finger-tips, cold feet, cramps, or other sign of impeded blood circulation and propensity to bleed from the nose, gums, rectum, and other parts, with slight provocation. The subject often complains of general sensitiveness to cold, and yet the pulse will be hard and firm. Palpitation of the heart, languor, early fatigue, and

inability for prolonged effort are commonly present, soon or late, while pallor, anæmia, or at least a general appearance of being below par, assist the professional eye to detect a subject of this disease. The mental tendency is gloomy, to "blues" and irritability of temper, and lack of hope and ambition. In advanced cases an inflammation of the retina (the deep light-sensing membrane of the eye), called retinitis, is quite characteristic of the disease; while the ears are subject to noises not at all distinctive, except, perhaps, in their persistence. Œdema, in the form of puffy lower eyelids and swelled ankles, is one of the common later symptoms, while general dropsy from weakening heart comes toward the last.

It must not be supposed that any one case will include all, or even a fourth of all these symptoms, and yet in the course of years the majority of them may appear in turn, or a few at a time. When some such symptoms are present, and the question arises as to diagnosis of the true state of the patient, an examination of the urine will aid in settling whether the kidneys are or are not subject to this disease.

One of the proofs of its presence is the discovery of albumin in the urine, by special tests which will readily detect the presence of so small an amount as one part in 10,000. The significance of albumin thus found is yet undecided. Many physicians claim that under some circumstances it may be found in the urine of healthy persons, as of soldiers or athletes after prolonged effort, while others claim that it cannot occur without some weakness or predisposition to Bright's disease. Life insurance examiners, as a rule, "hold off" a candidate for insurance if even a small trace of albumin is detected, until repeated examinations show that it no longer occurs. Yet, on the other hand, there have been observed many true cases of chronic nephritis, in whose urine albumin was never detected.

Another more certain evidence is the discovery, by aid of the microscope, of little "casts," which have been shed from the lining cells of the kidney-tubes, and are found in the sediment that settles in the urine. There are several varieties of such casts, which tell much of the stage of the disease, its seriousness, and rate of progress. Their presence proves much, but their absence does not necessarily prove that there is no form of Bright's disease. The urine may give other indications which, if frequently observed, are of much significance, viz.: constant low specific gravity (about 1010 to 1015); deficiency of phosphates in urine; and increase of uric acid and oxalates. The urine is naturally a pretty complex solution of chemical waste matters, and the capacity or integrity of the kidneys can be gauged largely by what it can do in eliminating them.

The patient with Bright's disease is not likely to suspect anything wrong with his water from its appearance, unless perhaps he notices that it is generally too high colored or pale, and the first symptom that may call his attention to it is that he is troubled with frequent calls to urinate during the night. The amount at any one time may be small, but in the course of the day and night it will generally exceed the normal. When urine is rather heavy, cloudy, and malodorous, and quickly throws down a large amount of sediment, it indicates that the kidneys are successfully doing more than they ought to be called upon to do, probably because of defective action of other organs. No doubt their power may be weakened by over-work, and the patient who has what he calls "bad urine," does well to submit a sample to his physician for examination, but he should not be surprised to receive the report that his kidneys are not diseased, but that the disorders that deserve attention are in fact in other parts. If these be not corrected, it may not be long before the kidneys will become worn out and irritated to the point of "breaking down." It is, of course, very unwise to neglect giving due attention to what may be called the precursory conditions of Bright's disease.

In the preceding chapter, when writing of the evils of constipation, I intimated one that may now be more fully explained. If the liver and bowels are clogged, their work may be in part left over for the kidneys, which, therefore, volunteer to attend to business that is not properly just in their line. If this be necessary for any considerable period, it is somewhat risky for the kidneys, and they may wear out in the attempt to perform unnatural tasks. The fact of "auto-intoxication" from insufficient fecal evacuation, from fermenting and rotting changes producing gaseous and other poisonous substances that are absorbed into the blood and slip through the sleepy liver, is being more and more remarked upon by medical writers. Many of the symptoms of indigestion, nervous irritability, mental dulness, headaches, sinking feelings, and other indications of self-poisoning thus occasioned, may be merely the signs of a state of disorder that leads to confirmed kidney disease, though they are likely to be rather more constant and persistent when the kidneys grow weary and can no longer do even their own full duty. The insidiousness of Bright's disease, and the difficulty of saying positively yes or no in answer to the question, "Has it begun?" is universally admitted among medical men. Even the "totality of symptoms," including what may be learned by frequent examinations of the urine, may not suffice, but whenever there is any reason to suspect its possibility, it is none too soon to give due attention to the case, and many times I find the indications by urinary tests in cases with no "characteristic" symptoms—that is, without any complaints to indicate that the kidneys must be involved.

There appears to be a prevailing notion that "the first urine passed in the morning" is what a physician prefers for examination. I find that is generally what is sent me unless I state distinctly that it is not what I want. It has its use—for shedding light on a case—if accompanied by others; morn, noon, and night samples go well together; but if only one is sent, I prefer to have that of the noon time, or about four ounces taken from the mixed accumulation of twenty-four hours. With the latter, and a statement of what the whole amount was, I can figure out pretty accurately what the daily output is, and so judge of the state of the kidneys by their working capacity. It is generally agreed that they may occasionally leak a trifling percentage of albumin, or shuffle off a few "hyaline casts" or molds of their tubing, when there is nothing more than neurasthenia, or from some temporary disorder resulting from excesses of various kinds, but when the percentage of dissolved "solids" is persistently short of normal, then there is good reason to believe the eliminating power of the kidneys has been curtailed by actual disease. So a study of the amount of urine and its specific gravity (or weight) may show more than the discovery of albumin now and then.

## BICYCLES AND BRIGHT'S DISEASE.

Only a short time ago I had a sample of urine taken from a young man who had just completed a "century ride" on a bicycle in less than five hours, and found "abundance" of albumin, from an examiner's point of view. Yet it is very doubtful that there is anything wrong with his kidneys; but I would certainly fear that some day there may be if he repeats this excess of effort several times. Overtraining in cycling develops an enlarged heart—the "cycle heart"—which, in time, favors changes in the arteries and kidneys. Various authorities who have gathered facts from numerous post-mortem examinations report finding from eighty to ninety per cent. of hypertrophied hearts with advanced lesions in the kidneys. The proportion of deaths from kidney disease is certain to be increased from injudicious and excessive indulgence in sports of various kinds, but mainly from those which strain the heart or over-develop it as reckless cycling does. Two facts should be impressed on the public mind in reference to the relations of exercise to heart and kidney diseases; first, that they may be induced by over-doing, either by too sudden or prolonged effort; and, second, that when either the heart or kidneys have become weakened, the amount of exercise to be indulged in, must be far less than permissible to, or wholesome for, a whole and sound man. Dr. Sapelier, a French writer upon hygiene of Bright's disease forbids his cases any indulgence in cycling, even in moderation, but permits and advises walking and horseback-riding. In my opinion, a stroll on a cycle can be enjoyed with less actual effort and strain on the blood-vessels than from quick or far walking, and surely some horseback-riding would be much too vigorous exercise for many cases of even mild Bright's disease. Any moderate exercise may be recommended for cases of kidney impairment that will not cause appreciable increase of the heart's action, or uncomfortable fatigue. The latter, if it occurs, is likely to be an indication that more fatigue-poison (muscle-waste) has been produced than the kidneys can eliminate.

## THE CURABILITY OF BRIGHT'S DISEASE.

To the possible subject of this affection, the most interesting facts are those relating to its curability. In one sense it is incurable; that is, whatever portion of the kidney has been wasted and destroyed by inflammation cannot be rebuilt, but must remain a scar. A good deal of one kidney may be reduced to scar-tissue without throwing the remaining parts out of work, and a cure, so far as it is possible, consists in checking the destructive process, and saving all that can be. The disease is slow, as a rule, and if diagnosed and attended to in time, much can be done for its relief.

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Dr. Arthur R. Elliott says : " A beneficent Nature has endowed the human organism in essential places with organic provision sufficient to meet any reasonable degree of strain above the physiological level that may be imposed upon us by the exigencies of life. Accordingly, we are provided with lung-tissue largely in excess of the capacity for aeration necessary in ordinary physiological living, so that we are enabled without difficulty to meet emergencies, and so it is that extensive organic impairment of lung-tissue is compatible with a fair degree of health and usefulness. We see this admirable arrangement duplicated in the kidneys—organs which are even more abused than the lungs, even more frequently called upon to protect the system from the results of our excesses. It is certain that there is a far greater supply of renal gland-tissue than is ever required in physiological living, and which can be dispensed with without discommoding the individual so long as ordinary conditions prevail. The degenerative changes which are the special feature of the granular kidney advance very slowly and may exist months and even years before the renal-tissue has been so far encroached upon as to render the organs incapable of the proper performance of the work demanded by normal conditions. It is then only that a distinct and certain set of symptoms becomes apparent. Ralfe indeed states that it is only when *two-thirds of the kidney* substance has been destroyed that toxic symptoms become prominent. If, by good fortune, the disease is discovered in its incipency, before the organs are greatly hampered, a very promising field is open to our endeavor, and by judicious management further advance may be arrested or so far retarded as to enable the patient to live in comfort and usefulness many years. It is not too much to say that the majority of cases of chronic interstitial nephritis are never discovered, and that apoplexy and heart disease frequently usurp its rightful place upon mortality records."

In a comparison of views of eminent professors of all countries, there is a remarkable unanimity of opinion to the effect that in cases of Bright's disease, life can be indefinitely prolonged by hygienic and medicinal means. At a meeting of the Practitioners' Society of New York, one speaker told of a commodore in the navy, still in service, who was pronounced to have Bright's disease thirty-five years ago; while another respected authority expressed the opinion that a person with albumin and casts in the urine "might live as long as anybody." A life insurance examiner almost acknowledges that a Brightique may do better than that, because, if warned of his weakness, he will be more careful than the robust man, take less risks, and escape many dangers that are liable to suddenly pick off the latter from the list of the living.

I was once called to treat a case of Bright's disease in Worcester County, Massachusetts, of three years' standing. The patient's local

physicians said she could not live a month. She had been for several months bed-ridden, and a dear sister had been called home from a distant city under the supposition that she could not long survive. In two months I had her off her bed, and she lived for over *thirty* years, dying finally of infirmities peculiar to old age. After her recovery from Bright's disease she used to say that a sensation was ever present as if she had a cavity in one of her kidneys. Since treating that case I have had many similarly but not so seriously affected, who have been to all appearances restored under my treatment. In the case here referred to I did not have the advantage of seeing the patient personally before or during the treatment. Her sister was the bearer of the first course of remedies, and the subsequent treatment was conducted by letter and express. Years after her recovery she favored me with a visit to express her gratitude.

Probably there is no chronic organic, or so-called "wasting" disease, in which good advice, management, and treatment can be so effective in staying progress as in Bright's disease. In the main its hygiene consists in moderation in all things, avoidance of hard labor, severe exertion, and rapid exercise, restriction to a vegetable, cereal and fruit diet, with eggs and milk, and abundance of pure water to flush the kidneys. It is important to maintain sufficient bodily warmth by suitable clothing, and always to avoid a "chill," or anything approaching thereto. With the inflammation of the kidneys subdued by appropriate treatment, and the adoption of a course of life tempered to the tender condition of these delicate organs, "even an advanced grade of contracted kidney may be compatible with great mental and physical activity," says a writer on this subject. The trick of prolonging life on one kidney, as it were (and, by the way, the left kidney, for well understood anatomical reasons, is most prone to disease), consists in so living as to give it as little as possible to do, by avoiding such foods as make ashes for the kidneys to secrete (*i.e.*, nitrogenous substances, especially meats), and exercise that excites the heart's action and hastens the production of waste matter for the kidneys to handle.

Dr. Henry B. Millard, while claiming that a much more cheerful outlook can be promised for a man with consumption of the kidneys than for one with consumption of the lungs, further says with emphasis: "When I say that many cases may be cured, it is not to be inferred that a cure is always easy, or to be effected without a great deal of labor and time on the part of both physician and patient. Circumstances must favor the latter in enabling him to pursue the treatment uninterruptedly for as long a time as is necessary." This accords with my own experience, and I would even add that to preserve intact from further consumption what is left of working kidney tubules, it may be necessary to prolong or continue the hygiene as recommended



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for the rest of his life. He cannot afford to take chances of "colds on the kidneys," or other acute disorders which can be lived through by those who have yet kidneys to spare.

### FURTHER ON THE HYGIENE OF BRIGHT'S DISEASE.

Dr. Sapehier also remarks upon this in these strong words: "We repeat, then, it is the duty of the physician to be severe—very severe—with reference to the general and dietetic hygiene of Bright's disease. Any imprudence, any departure from the prescribed regimen, may be attended by serious consequences, and may even compromise a cure and place the life of the patient in danger, or, at least, cause him to lose, for an ephemeral gratification, the benefits of treatment which he has received during a more or less prolonged period." He strongly advises, in accord with my own views, a continuous life in flannels—all the year round. As to bathing, sea-baths are generally not thought good for such subjects, but a daily sprinkle of tepid water and thorough frictioning of the skin is advisable.

Again, as to diet: There is general agreement that avoidance of meats is wise, while all commend the free use of pure water as a diuretic to flush the kidneys before meals and at bed-time, and all writers equally insist upon free and easy action of the bowels, by resort as may be required to hygienic or medical means to effect this purpose. Milk is favored both as a food and diuretic, and in some cases may be adopted as the only food with advantage, at least for a few weeks at a time. Buttermilk may be an agreeable change. Eggs are generally permissible, and so is fresh pot-cheese, but not strong or old cheese.

The hygiene of Bright's disease also requires a free and easy mind as well as bowel. Professor Clifford Allbutt remarks that in thirty-five cases under his observation, twenty-four showed a marked history of mental stress or care. Whatever the relation of mental strain to kidney disease as sole cause, none would doubt the necessity of avoiding care, anxiety, and all depressing mental influences as part of the means of cure. While mind work is less productive of waste products for the kidneys to handle than is physical labor or much exercise, the nervous system may be unwisely strained or over-taxed by work as well as worry; and, furthermore, there is an expense-account, from many enjoyments, which Brightiques better not run up too fast.

Bright's disease is quite a common complication of pregnancy, going from bad to worse until delivery occurs. The poisonous state of the mother's blood often blights the fœtus so that premature birth or abortion occurs spontaneously, as Nature's own way of saving the mother, for if this ordeal be safely passed, the kidneys may quickly be relieved of their dangerous condition; but sometimes it becomes necessary to effect this mode of relief artificially, and wise physicians nowa-



days keep watch of their "confinement cases," and make frequent examinations of the urine so that they may know if the kidneys are becoming congested, and to what extent.

Dr. Sappey gives further advice, which accords with what I have been accustomed to offer all my cases: "Women suffering from Bright's disease should not be allowed to marry, or, at least, should not become pregnant, as all will agree. Men suffering from Bright's disease must, in our opinion, exercise the greatest moderation in respect to sexual relations. We have observed cases in which sexual indulgence has contributed largely to the aggravation of symptoms.

"Tobacco is an enemy to the subject of Bright's disease. We have observed in the subjects under our care in the hospital service, acute attacks which could not be explained otherwise than by the use of tobacco, by chewing, snuffing, or smoking. If tobacco does not act directly upon the kidney, it is at least unfavorable to the heart, which is already sufficiently threatened by Bright's disease.

"As to alcohol, all are agreed in recognizing that in any form it can only be harmful to the subject of Bright's disease."

#### MEDICAL TREATMENT OF BRIGHT'S DISEASE.

As to medicinal treatment I can only say that there are many resources for one who knows well how and when to apply them, but I could not hazard any attempt to instruct the non-medical man how to employ them without possible misapplication. Digitalis, for instance, may be of great utility for diuretic effect, as well as a heart regulator, but it would be very risky to try to explain when to use it. Iron, in some forms and doses and in some cases, can be made serviceable, but more often as commonly employed in some compounds, it would be an irritant and may better be let alone. When employed it is better to use vegetable remedies containing iron. There are many forms of chronic disease where it is very poor policy for non-professional persons to prescribe for themselves, and in none more than to the class of genito-urinary troubles does this remark apply. Yet, because the onset of Bright's disease is so like mere debility or indigestion, many do go just the wrong way and ply themselves with tonics, stimulants, and a "high diet," or take up exercises not well-suited to their real needs. If the candidates for Bright's disease could all be detected, and properly advised before going too far in "taking title," many could be saved from its fatality.

I shall be pleased at any time to advise those of my readers who have any reason to suspect that they have the disease under consideration. Answers to the questions on page 761, accompanied with samples of the urine, according to instructions hereinbefore given, will receive my careful consideration.

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### Kidney Colic, or Gravel.

When, through perverted nutrition, the blood becomes impure and the urine abnormal—either too acid or too alkaline—it may happen that certain ingredients will not remain in solution, but crystallize into solid particles prematurely or before the urine leaves the kidneys. Such accumulations are called gravel, calculi, or stones, and are apt to have pricking points or sharp corners, which, as the stone descends through the narrow ureter, scrape along, attended with terrific pain, until the stone drops into the bladder.

A glance at Fig. 177 (page 507) will show that the kidney stone has quite a journey to reach the bladder, and the wear and tear thereof, and, of course, the attending agony, will be according to its size and shape. Some are very “three-cornered” and rasping. The stone may later make another uncomfortable trip through the urethra, unless that canal is of sufficient size to favor its easy expulsion.

Persons who have one such experience are likely to have more, and soon learn that they are victims of kidney colic. The treatment necessary is of two kinds. During a spell of “borning” a baby stone, relief can be had by hot baths, opiates, and relaxing medicines, like lobelia; but the wise treatment is, of course, such as will cure the cause, and put a stop to the formation of the calculi; for there is not only the distress of the colic, but the further danger that the gravel may linger and agglutinate in the bladder to form a stone which will some day require a surgical operation for its removal. Such operations are generally successful, but not always; and in no phase of disease is it more evident that prevention (by appropriate medicinal treatment) is better than cure (by surgical operation). Some who read this may have been my patients, when they were suffering with this very painful trouble, and they will be able to recall with much satisfaction the almost instant relief they received from my treatment, and that, too, without opiates. I might speak of some very interesting cases, but time and space forbid.

### Cystitis.

Inflammation of the bladder may arise from a variety of causes, and produce an amount of suffering that can only be appreciated by one who has had it. The bladder may smart under the influence of a hot and acrid urine sent down from inflamed kidneys, until its own lining membrane becomes inflamed; or an inflammation in the urethra may extend into the bladder; but, no doubt, catarrhal inflammation of the mucous membrane of the bladder may originate, as catarrh does any where else, from the irritating properties of the blood sent through

its capillaries. The symptoms referable to the bladder are pretty much the same whatever the cause of the inflammation, but the determination of the cause may be very essential to successful treatment. Pain and soreness over the region of the bladder, low down in the abdomen, are prominent symptoms, and frequent calls to pass water, inability to retain long after notice is given, and smarting while urinating are among the symptoms to be expected. The urine is apt to be "off color" or high-colored, and to contain an excess of mucous sediment or catarrhal (slimy) matter. Even pus and blood are found in it in serious cases. The microscope is a useful aid in examining the sediment to decide the exact nature of the case. Of course the presence of

FIG. 180.



SMOOTH.—BLADDER STONES.—ROUGH.

a stone in the bladder is cause enough for cystitis, and accurate diagnosis of its presence or absence can sometimes only be made by a "sound" (steel probe) passed into the bladder through the urethra. The sound of a "sound" striking a stone settles any question as to its presence. When, besides the usual symptoms of cystitis, there occurs occasional stoppage of urine in passing, or frequent pains near the end of the urethra, it is time to suspect the presence of stone. Some quite large stones have smooth surfaces and cause less irritation than others of smaller size and of very uneven feel. The latter are especially adapted for rasping any sensitive mucous surface. The small boy will go around comfortably with his pockets full of stones, but the bladder is no place for them.

In the treatment of cystitis, after the kidneys and urethra have received due attention, the bladder itself may often be considerably eased by cleansing, antiseptic solutions injected through a catheter or

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soft rubber tube, which a patient can easily learn to introduce to the bladder. This means of clearing out all ferment and urinary remnants is of great service, but the main reliance for cure must be resources for removal of the cause, or chronic cystitis may continue obstinately and develop most distressing and even fatal complications.

### Enlarged Prostate.

A neighbor of the bladder, from which it is liable to suffer much inconvenience, is the *prostate gland*. In elderly men this is very prone to become enlarged so as to obstruct the free flow of urine from the bladder, for the prostate gland surrounds the urethra where it joins the bladder. So troublesome is this form of obstruction that many of its subjects are willing to submit to anything for relief. Almost the "last thing out" in the way of surgical treatment is the removal of the testicles, which many old men are willing to part with for so great a consideration as relief from enlarged prostate. The theory is that their removal induces a withering, or atrophy of the prostate, and practice, in the few dozen cases so far reported, seems to support the theory. Whether there will be occasion to regret castration for this purpose because of subsequent impairment of general vigor remains to be seen. If all-round atrophy or progressive senility should be one of its results, there will be "cause why" to seek a better way. Among the better ways already experimented with, is the cutting out of the spermatic cords, only leaving the testes in place, and surgeons are reporting some encouraging cases of this kind. Many cases of enlarged prostate can be kept comfortable by care in diet and beverages, and by constitutional and local (per rectum) treatment, and if they now and then get cornered with inability to evacuate the bladder, a soft catheter kept ready to hand will enable them to pipe the bladder through the obstruction, and thereby get immediate relief; but it is indeed unfortunate to reach the state where it must be used every time. In all cases, it is better to try skilful medical treatment before resorting to surgical methods, for medicines can be prepared for most of them that will at least give relief to the more painful and dangerous symptoms, and many of them may be radically cured by the use of such remedies as will restore the general health. I would be pleased to advise any elderly person who may be a victim to the trouble.

### Incontinence of Urine, Etc.

The inability to retain urine naturally during day or night almost constitutes a disease in itself. It is the "bed-wetting" complaint of childhood, but in adults it is more often a trouble of the day-time. Occurring in children there may be no other symptoms requiring atten-

tion, and with the exception of wetting the bed almost every night, there may be nothing seemingly wrong with the child. Various means of relief have been tried, with more or less success. In some cases "moral measures" are needed; that is, the child must be impressed with the importance of rousing itself to attend to this function, and even a spanking has been found effective, but I almost hesitate to mention it, lest it be too often misapplied, for the fact is that most of such children are really not to blame, and simply cannot help what is entirely involuntary during a sound sleep. A vegetarian diet, or omission of meats of all kinds, has often been sufficient to cure. To give the child less fluid drinks or food toward bedtime may be helpful, but even that may be carried too

far. To rouse it when the parent retires, and again very early in the morning, may or may not solve the problem. To raise the foot of the bed has been recommended. Generally, the quality of the urine is not right, or there is a weakness of the closing muscle at the neck

FIG. 181.



A SOFT CATHETER.

of the bladder, and these are conditions calling for appropriate treatment. The urine may be too acrid or "not strong" enough. The bladder most comfortably retains normal urine, and that is a mildly acid or neutral solution of many things. Plain water is probably no more congenial to the bladder than to the eyes or nostrils, but salts in solution make the water bland. Both in children and adults urine may occasionally be too watery to be bland and easy for the bladder to hold, or it may be too acid and cutting. The kind of treatment required depends on which way the urine is at fault, and if the urine is not "off," then the sphincter muscle needs a tonic. Pin-worms may be a cause of such incontinence in children, or other local irritation, such as arises from the lack of cleanliness caused by an elongated and constricted foreskin. Early circumcision, or dilation, may, therefore, be just what is needed for relief of this, or even worse troubles of childhood, for which it has often been found responsible.

During the strawberry season, and other times, when fruits of an acid nature are generally eaten, I hear from many adults complaints of irritable bladders and frequent calls to urinate, with attendant heat or pain. Caution in diet and the use of alkaline waters are prompt to relieve. Many women suffering from a relaxed state of the pelvic parts are annoyed by inability to hold urine perfectly when laughing, coughing, or sneezing. Local, as well as general tonics, are then called for. In men of advanced years, with enlarged prostate, there may be a constant dribbling when the bladder is really over-distended—a true over-

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scribed ; but in no case of gonorrhœa or other inflammatory affection of the urethra, nor in a case of stricture, should the person affected trust to his own judgment and remedies, unless he be himself an expert in the treatment of these maladies.

Among "young men about town," gonorrhœa is regarded far too flippantly, and many are heard to say they "don't mind it any more than a cold in the head," but most of these reckless fellows learn their mistake in course of time. Aside from strictures and the no-end of trouble that may arise from them, gonorrhœa may be early followed by the most intractable form of rheumatism, and lay a man up for six months, or it may bring on orchitis (swelled and inflamed testicle), one of the most painful diseases known, and keep him out of business on that account from three to six weeks. If both testes be thus affected, the inflammation may seal them up for life and render him sterile, or incapable of paternity, and it is well for posterity that it is so.

In woman, gonorrhœa has opportunity to do more lasting harm than in men. The gonococci (microbes of the pus) may find their way into the womb and along the Fallopian tubes, and light the fire of an inflammation that can hardly be quenched, or if it be, the scars left in its wake will be very likely to cause barrenness and, again, it is well that they do.

Another serious complication of gonorrhœa in either sex is its infection of the eyes, when through carelessness a particle of the discharge is conveyed to them on the finger. Innocent children also may become victims of the disease when gonorrhœal relatives or boarders in the family are reckless in the use of towels and handkerchiefs. The discharge is always extremely contagious, and should be handled with care, and cloths that have come in contact with it should, as I have before advised, be destroyed by fire.

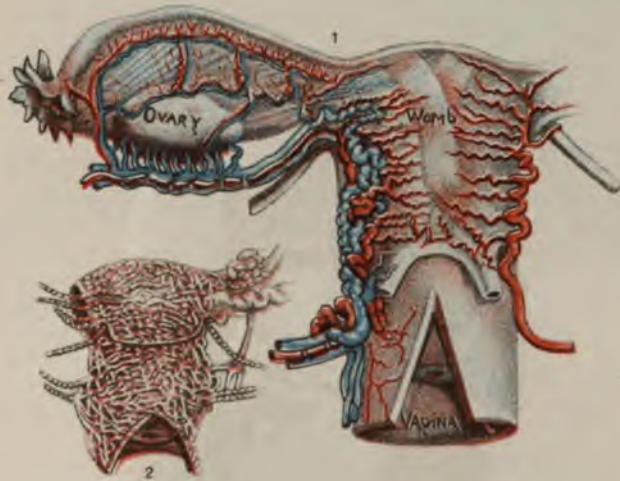
Perhaps no disease is more often treated with medicine recommended by a friend, or bought ready-made of druggists ; but the possibility of serious complications and sequelæ make it eminently wise for any and every victim of it to obtain the best advice and treatment he can afford. It is not a disease to trifle with in any case. There are however, a few simple measures that all may promptly and wisely put in practice as soon as they have reason to suspect gonorrhœa. First, take things easy, lay off from work if possible, and at least go slowly. Also simplify diet, eat less than usual, avoid stimulating food and drinks, including liquors, tea, and coffee, and spiced food ; and, if in the habit of using tobacco, drop that. Drink freely of pure water, or a mildly alkaline mineral water, or water with a little baking soda in it. Flaxseed or slippery elm teas are good. Keep the bowels comfortably free by laxatives or copious warm water injections. Locally keep clean, and soak the parts twice a day or oftener if possible, with a large sponge full of hot water, during ten minutes or more. Wear a suspensory



# PLATE V.

P. H. T. PART II.

WOMB ANATOMY.



1. BLOOD-VESSELS OF WOMB AND OVARY.
2. LYMPHATICS OF THE WOMB
3. NERVE SUPPLY OF THE WOMB AND ADJOINING PARTS, SHOWN IN WHITE LINE NETWORK, MAINLY OF THE SYMPATHETIC NERVOUS SYSTEM.



PLATE VI.

ABDOMEN AND PELVIS.

PLAIN HOME TALK.

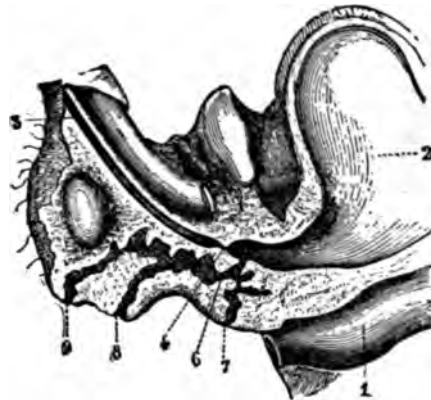


SIDE VIEW OF ABDOMEN AND PELVIS, SHOWING THE DIAPHRAGM, LIVER, GALL-BLADDER AND STOMACH DRAWN UP, OUT OF NATURAL POSITION; THE "REFLECTIONS" OF PERITONEUM OR SACK WHICH COVERS THE ORGANS AND HOLDS THEM IN PLACE; AND ALSO THE RELATIONS OF WOMB, BLADDER AND RECTUM.

## URETHRITIS, GONORRHŒA, GLEET, STRICTURE. 529

bandage to support well the testicles, and at first sign of swelling or pain there, take to the bed if you have not already laid up, and call your doctor. I admit that most cases of gonorrhœa get well under the disadvantage of attending to one's usual business, but there are complications which should at once put a stop to this, such as swelled testicle, bubo (swelled glands in the groin), extreme œdema (swelling with water) of the foreskin, paraphymosis, constriction of the foreskin behind the glans penis or acute rheumatism of the joints. If any such complications arise you cannot afford to do without the care of a physician.

FIG. 185.



URINARY FISTULA RESULTING FROM STRICTURE FOLLOWING GONORRHŒA.

1, rectum; 2, bladder; 3 urethra; 4, strictured point of urethra; 6, 7, 8, 9, tracks and outlets of fistula, or false passages through which urine escapes, between the legs and back of the rectum. This illustrates one of the most troublesome complications which may come from gonorrhœa. It is of course a case for surgery, and a very difficult one for the most expert operator.

The author has long been accustomed to invite free consultations concerning all the diseases of the urinary organs, including several not common enough to be described herein. Where analysis of the urine or microscopic study of the discharge is necessary, three dollars is charged for this, except to those already undergoing treatment. Samples should be sent by express, prepaid, or, if by mail, only in special mailing boxes.

## CHAPTER VI.

### PRIVATE WORDS FOR WOMEN.



**I** WANT the attention and candid consideration of my female readers to what I have to say regarding the common affections of the amative and procreative organs of their sex. It will not do to pass this subject over as too vulgar or indelicate for investigation. If it be pretended by any woman that she places no value whatever on the enjoyment

which may be derived from the reasonable use of healthy procreative organs, she will not certainly be ashamed to admit that physical health is a blessing, and that disease, whether in the head, stomach, or the organs of generation, is an evil which she should employ her faculties

of reason to avoid. If the subject is delicate, the complex sexual organism is also delicate, and a vast amount of human suffering, not only to women themselves, but to posterity, results from a foolish squeamishness on the part of many females, old and young, who shut their eyes upon everything calculated to teach them how to preserve the strength and healthfulness of the organs peculiar to their sex. The late Sir Lawson Tait, F.R.C.S., the eminent English specialist and operator in diseases of women, as long ago as 1890, in a popular lecture to women, opened his subject by expressing a hopeful view of their readiness to hear the truth on this subject, and I wish that even now, ten years later, I might have as much confidence as he seemed to entertain that the desirable "striking change" has come about. He was reported as saying: "A very striking change has come over the manner in which women regard all matters concerning themselves; and this change promises well for the health and comfort of the rising generation. Women were formerly ignorant, and it was believed that it was better that they should remain so, despite the constantly recurring experience of all who had to do with their special ailments, that a little knowledge

on their part of their peculiar functions would save them endless suffering. It is now an accepted article of faith that all matters concerning our lives may become the subject of legitimate inquiry, of reverent discussion, and that there is nothing known to us which may not be a subject of instruction to the purest and most innocent mind, if handled in such a manner as to have for its object the benefit of those who are instructed."

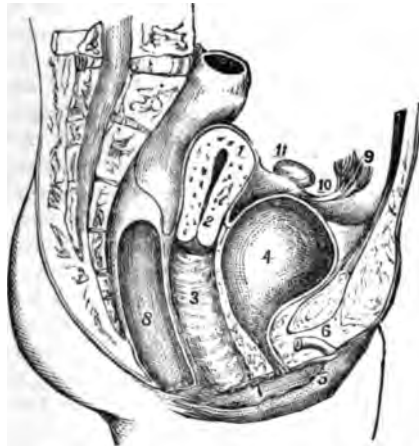
What the speaker said at the same time in reference to the physical disabilities of women is also sufficiently interesting and instructive to quote here, and it needs no amendment because spoken ten years ago. It was as follows: "None of the many mysteries displayed by the study of life has been to mankind more unintelligible than that of disease, and nothing is more striking about this than the terribly disproportionate amount of suffering which falls to the lot of women. All my life I have been engaged in the study of their special ailments, and no conclusion is more firmly rooted in my mind than a devout thankfulness that I belong to the other sex. A wise Frenchman formulated this conclusion in the brief sentence, 'woman is always ailing.' Yet this seems to be the lot of civilized women only, and to be the result of their civilization—why we know not. Take the case of a half savage negro woman, working in a sugar-field. The pains of labor will come upon her; she will go on working till her child is almost born; she will retire to some secluded spot, alone and unattended; will go through her travail, and return to her field work in an hour or two. Such a proceeding would be certain death to a woman living in a civilized country. Hundreds, nay, thousands of women in this country suffer from diseases which are almost unknown—indeed, I might say are absolutely unknown—amongst savage races. These diseases are on the increase—have increased amazingly in my own time. Why this is so we cannot guess; but it is certain that the blessings of civilization bring their corresponding curses with them, and that a change somewhere will have to be effected, unless we are to submit to the extinction of civilized races by the advance of these special diseases of women."

When Dr. Tait says, "Why this is so we cannot guess," I am surprised, but as it is the Yankee that "guesses" instead of the Englishman, this fact may account for that. Dr. Foote and some of his American contemporaries not only "guess" the causes, but they are presented in this volume, or at least many of them, so clearly that they appear to be self-evident.

Many years ago it was said "Catherine Beecher goes from one village to another in New England, and reports that there are no healthy women to be found within their limits, though the oldest inhabitant remembers one, his grandmother." Dr. Anna Longshore Potts has visited hundreds of villages in old England, the home of the late Dr. Tait,

and other cities and villages from New York to San Francisco on this continent ; also in Australia ; and her experience is entirely in accord with that of the late Catherine Beecher and the late Dr. Tait. I have at hand abundant further testimony from physicians, both in general and special practice, but to take space for it would be superfluous. Even our American novelist, William D. Howells, speaks of the "typical

FIG. 186.



ORGANS OF WOMAN (DIAGRAMMATIC),

To which allusion is made in this chapter—1, top of the womb ; 2, neck of the womb ; 3, vagina, or cavity, opening in front, and extending back and encircling the neck of the womb ; 4, the bladder, with the urethra ; 5, left external lip of the vagina ; 6, the clitoris, or the organ in woman corresponding with the head of the penis in man, but without orifice ; 7 is intended to designate at its upper part, the location of the hymen in young women ; 8, rectum ; 9, minute terminal branches of one of the Fallopian tubes ; 10, one of the Fallopian tubes ; 11, one of the ovaries.

were not necessary in their day and generation. I do not wish to neglect this opportunity to remark, however, that past generations of women are credited with having possessed more universal health than was actually the case. Only the *living* grandmothers are pointed to and quoted, while it is not borne in mind that many of their generation died even before they became mothers. Young unmarried women, and

American girl, never very sick, and never very well."

It is not denied that there are many exceptionally healthy women at all ages, but those very ill will outnumber them. There are reasons for this unhealthiness among females, and it will not extenuate the matter to say that while our grandmothers were apparently more healthy than women at the present day, they were quite as destitute of physiological knowledge. This may be true. But if the advance of civilization carries with it great blessings, it also drags in its trail pernicious evils

which science as well as good morals must do much to avert. Our grandmothers were not so much the slaves of pernicious customs and fashions as those who are in future to become grandmothers, and consequently many precautions which are necessary to maintain health to-day,

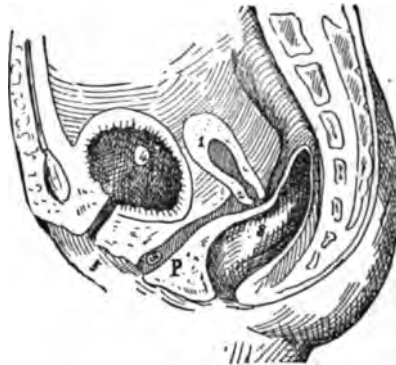
young mothers, have died in all ages of the world, a large number of whom might have been saved to become grandmothers, had they properly understood and regarded all the laws of life and health, or what are frequently contemptuously termed "new fangled notions" by those whose fast habits of living are as fully up to the customs of civilization as their ideas of physical preservation are far down in fossilization.

It is by no means a pleasing diversion to startle the public with the utterance of strange facts, and with opinions entirely at variance with those popularly entertained, nor to place one's self in a position antagonistic with everybody else, so as to stand like a target for the venomous arrows of envious contemporaries; but I have so little respect for error, modern or antiquated, that I would rather have my pen rest and rust than use it in pandering to ridiculous fancies and propping up dogmas which, if not bolstered up by a rigid conservatism, would fall through their own inherent rottenness. This book is not written

to gloss over prevalent vices or to eulogize customs and views founded only on the whims and caprices of mankind, but to take a common-sense view of the subjects on which it treats.

Uterine diseases are becoming so common, that women entirely exempt from them are more rarely to be met with than those who are suffering to a greater or less degree with them in some form, as has been already remarked by many observers. Nor do these difficulties affect women merely locally. So complex and delicate is the procreative system, and so intimately connected is it by the nervous ramifications with every organ in the body, it cannot be the seat of disease without affecting the general health. Even so natural a process as fetal formation in the uterus disturbs the health and comfort of nearly every

FIG. 187.



ANOTHER SKETCH MORE TRUE TO LIFE.

In illustrating the actual relation of the parts to each other. See preceding cut for names of parts denoted by figures. This better shows the perineum (P) or perineal body, a mass of muscle and flesh which is too often torn by child-bearing, thus weakening the support of the vagina and womb. Actually, the vagina is a closed canal, as in this picture, and not open as generally presented in illustration.

woman who becomes pregnant. Particularly in the first stages of pregnancy, nausea at the stomach and other disagreeable symptoms are usually felt, while some females, through the whole period of gestation, have painful, and others, alarming symptoms. In the case of a woman of Lyle, who had five children at one birth, during the last two months of her pregnancy, according to the statement of the *Journal des Annonces*, all objects before her eyes were several times repeated, but after her delivery her sight returned to its natural state. Now, if a woman is so liable to suffer, however slightly, when the womb is simply performing one of the functions it was made to perform, is it not self-evident to every person that the presence of disease must produce incomparably greater suffering? I can, at least, truthfully affirm that in a large majority of all my female patients, I have found more or less uterine disease; and, further, that it was the intermediate cause of whatever other difficulties existed. What I mean here by intermediate cause, is that which, following nervous and vascular derangements, produces, in turn, other physical ills.

#### CONCERNING CAUSES.

I shall not attempt to explain all the various causes of the special complaints of women, but I do wish to point out the most serious, common, and avoidable ones, in order that this chapter may be helpful in showing what women may do to save themselves from much unnecessary suffering. In the *American Therapist*, Dr. John Ford Barbour, has told so straight a story of the "evolution of ill-health in the American woman," that I can well reproduce it here for her enlightenment. This is his brief story: "Her undeveloped body is encased in corsets when she is fifteen years old. At school she learns a great many things, but is not taught that in order to have good health she must exercise the muscles of her body, and especially those of the trunk, daily and systematically. After marriage she settles down to a life of physical inactivity; she takes hardly any exercise, and even this little is not taken systematically; she does not breathe with the diaphragm; her circulation becomes feeble, her hands and feet are always cold; the blood accumulates in her abdominal and pelvic cavities; the functions of the abdominal and pelvic viscera are imperfectly carried on; she becomes dyspeptic; her stomach is distended with gas; her liver and intestines are torpid; the waste products of the system are not carried off, but accumulate in the blood. The opinion is constantly gaining ground that most of the functional nervous disturbances in women are due to auto-intoxication (self-constitutional poisoning).

"By and by the pelvic organs begin to show signs of disease. When one hears of the daily exploits of the abdominal surgeon, and learns that there is hardly one woman out of five who has not some



form of pelvic disturbance, the conviction forces itself upon the mind that surely our women must be grossly violating some fundamental law of health. We have traced out the chain of physical causes which lead inevitably to a stasis in the abdominal and pelvic circulation. As a further result of this stasis there occurs a sagging of the abdominal and pelvic viscera, and as the latter are underneath, they catch the worst of it. Malpositions of the uterus are produced; the power of resistance of the pelvic tissues to invasion by pathogenic microbes is lowered; the tendency to plastic exudations is increased; the resolution of inflammatory processes is very much retarded; and thus the foundation for every variety of pelvic disease is laid."

Corsets get early mention in the foregoing account of the evolution of weak women; but much more must be said of their evil effects in order to make any useful impression on the mind of the coming woman at all proportionate to their harmful impression on the body. In order to make it evident that I am not alone in my opposition to corsets, I will let another speak my views for me. Dr. Jerome Walker, author of a text-book on anatomy, physiology, and hygiene, offers a very moderate indictment in saying: "Any reasonable physician who knows the importance of girls being robust, must deprecate the hampering of muscular energy and the weakening of strength of internal organs, for which bands and corsets are largely responsible, for they are frequently tight-fitting, though very infrequently is this fact admitted by the fair owners of these appliances. Corsets or waist-bands, even if only moderately tight, are liable to have three bad effects: 1st, binding especially at waist-band and slowing the function of stomach and liver; 2d, pressing downward the contents of abdomen upon the pelvic organs, inducing pelvic disorders; and 3d, restricting the motion of the chest and its contents, the lungs. Rarely can a person wearing such constriction expand the chest above two and one-half inches, when the normal expansion should be three or even four inches. Many cannot reach an expansion of more than two inches—the *minimum* allowed for admission to life insurance companies."

The last writer fails to mention the limiting of the action of the diaphragm, that great muscle which makes a floor for the lungs, and a

FIG. 188.



COMPOSITE PHOTOGRAPH

Of girl in corset and without corset; an exact reproduction. Note the two outlines at the waist. This is not what is called "tight-lacing," but from a working costume.—Dickinson.

ceiling for the abdominal cavity. It normally acts like the piston of a pump—fifteen times a minute—and does much to pump up the blood from the abdomen and pelvis into the chest and heart. It gives a great impetus to circulation, as well as great suction to draw air into the lungs, and these important functions cannot be more or less repressed or held down every minute without harm to the general health, such as Dr. Barbour so well described. The vital organs must have sufficient room to work in, or they must certainly be impeded in the performance of their functions. The accompanying illustration (Fig. 189) gives

FIG. 189.



ROOM FOR VITAL ORGANS.

an outline when the waist-line is normal, while the opposite sketch, Fig. 190, gives some idea of what happens within when the waist-line is drawn in by too snug a corset-waist or belt. The liver, stomach, and bowels can bear some compression, but the mass that cannot be further compressed is driven down upon the pelvic parts, and then down against the womb.

At Chautauqua, N. Y., some years ago, the dress reform movement took a new start—as it does every few years—but somehow lacked the momentum to keep it moving, and the late Miss Frances Willard was one of the promoters of the “Dress Reform Crusade.” In a report of her remarks upon it was the following: “This death-line,” said she, drawing in the air with her finger the outline of a woman’s waist, squeezed into the shape of

an hour-glass, “has filled more graves than whiskey!” And she was applauded to the echo, many, no doubt, lending a hand in the applause who could not show a proper waist-line. Her denunciation of the evil of tight-dressing was as severe as she could well make with her position as leader of the Woman’s Christian Temperance Union crusade against whiskey.

Golf and cycling, and other outing amusements of the leaders of fashion, are doing much to make them familiar with the comforts and advantages of dressing with room enough to breathe and run, and among the more industrious classes “Rainy Day Clubs” are aiding to introduce costumes suitable for stormy weather. Fortunately there is, generally, something going on that tends to emancipate women from the worst faults of their modes of dress; but progress is practically extremely slow, and reactions or relapses into “bad form” are far too frequent.

Kate Field, when publishing her Washington weekly, in *World's Fair times* (1893), remarked upon the advantages to women's health, of Oriental costumes and exercises. "The mid-Orient," she said, "confines dancing to abdominal gyrations, marvellous as gymnastics and absolutely impossible to women who have ever worn corsets. Such development and control of abdominal muscles as are exhibited by the Cairo dancing-girls in Chicago would, if possessed by American women, be the salvation of the race. Invalidism would be impossible, and children would be born healthy. Other than as gymnastics the *danse du ventre* has no interest whatever. It has neither grace nor beauty, the dancers are not attractive, and their persisting in wearing French heels denotes incapacity on their part to appreciate the eternal fitness of things. Vulgar men and women who have set up a howl against this performance would do well to look around the American ball-room and dinner-table and discover like food for prurient fancy." The observant reader will remember that I have advised the *danse du ventre* for constipation. The last quoted writer is undoubtedly right in also advising it as preventive and curative in diseases peculiar to her sex.

The stated object of the Chautauqua crusade was to instruct women "to stand well, to walk well, to breathe correctly, and thus control the vital points of well-being." Contracted waists are not the only mistakes women make. By wearing too high heels they throw the body out of poise, as illustrated in the next Fig. 191. Faulty position in standing, walking, and sitting, together with a relaxed state of the abdominal muscles, from lack of proper exercise and general loss of tone of fibre, favor a general prolapsus or falling of all the internal parts. The relation of female weakness to general bodily relaxation is one of the facts insisted upon by Dr. J. H. Kellogg, and here is his forcible way of stating it: "*So-called pelvic disease, excluding infections, is seldom a distinctly local affection. A failure to recognize this principle has led gynecologic surgeons to remove a vast number of hyperæsthetic ovaries which were sensitive only because the patient was suffering from a general condition of malnutrition and resulting nervous irritability, and not infrequently to perform unnecessary operations. The gynecologist meets with a vast number of cases in which the symptoms relating to the pelvic organs are present simply*

Fig. 190.

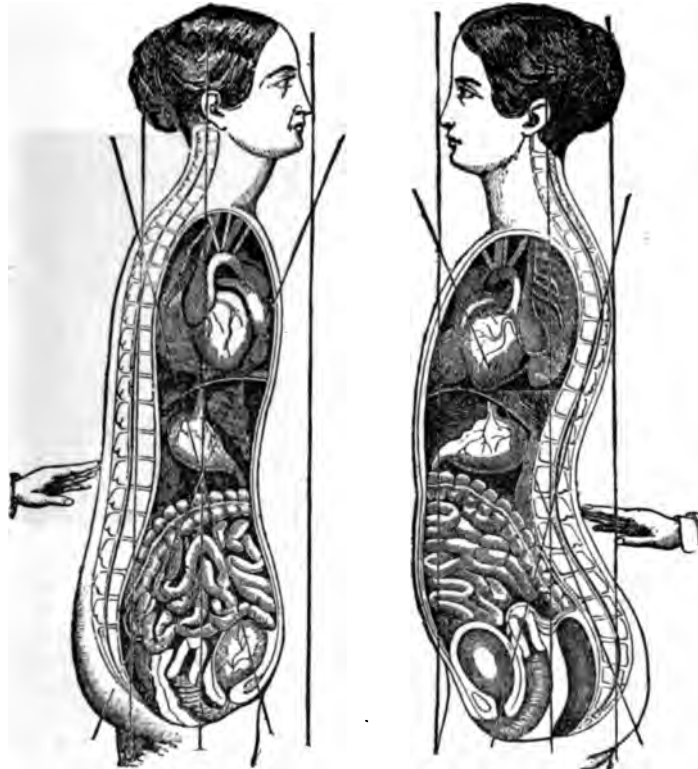


VITAL ORGANS CROWDED.

because the patient's general health is not good. Total extirpation of the pelvic viscera will not cure such a condition. I have seen many patients who had had both uterus and ovaries removed by some specialist possessed of a penchant for this sort of surgery, who were not

FIG. 191.

FIG. 192.



WRONG POSTURE.

RIGHT POSTURE.

Contrasting views of standing in the wrong way and the right way. The first picture shows a sagging of abdominal and pelvic parts, while in the second picture they are well posed.

relieved one whit of the various annoying symptoms on account of which the operation was performed, but whose condition was, on the contrary, actually made worse. A pelvic examination, even the most thorough, is rarely sufficient to furnish the necessary data for insti-



tuting a rational plan of treatment. In the great majority of chronic cases, excluding tumors and infections, the whole woman is sick—the whole body—and the condition of every important organ and every vital function must be investigated, and the possible relation of any general morbid condition to the pelvic symptoms must also be carefully studied. I have nearly always found serious displacements of the viscera (vital organs) accompanied by extreme irritability of the sympathetic nerve-centres of the abdomen, especially the lumbar or hypogastric plexuses and the solar plexus. The strain upon, and the constant irritation of, the great sympathetic centres of the abdominal cavity, from displacement of the colon, kidneys, or liver, is a constant source of reflex irritability, which, acting first upon the great centres of the brain and spinal cord, may be reflected to any or all of the superficial nerve-ramifications. That such an irritation exists is shown by the fact that tenderness of the solar plexus, of one or both of the lumbar ganglia, or of the lumbo-aortic plexus was found in a large proportion of the total number of cases to which the foregoing statistics relate. I have long been convinced that the greater number of symptoms, such as backache, dragging sensation across the lower abdomen, inability to stand long upon the feet, and similar symptoms are not, in the great majority of cases, due to pelvic disorders, but to the general visceral prolapse which not infrequently involves all the organs of the abdominal cavity. To effect a permanent cure in these cases usually requires considerably more than the employment of such local palliative measures as pledget-placing, electricity, and vaginal douches, or even plastic operations. Such methods of treatment must be instituted as will reconstruct the constitution, give tone to the nerves, vigor to the muscles, and cause a general increase of vital energy." All of which this work has, from its earliest editions, advocated.

FIG. 193.



A MIS-SHAPEN FORM.

Showing the effect of heavy skirts and a bad position in a woman aged twenty-four years.—Kellogg.

## CONTAGIOUS VENEREAL DISEASES.

Besides the general causes of diseases of women, heretofore described, there are others more directly affecting the generative organs. The contagious venereal diseases are too often responsible for not only acute affections, but also those of long standing. That mischievous systemic poison, syphilis, does more general than local damage to health and displays its ravages from head to toe, in brain, nerve, skin, and bone. Not a tissue of the body escapes its devastations, though in any given case it is prone to take one part at a time rather than affect all at once. I have already, in a previous chapter, briefly reverted to the complicated troubles that gonorrhœa may bring upon women. If it light up a fire (inflammation with catarrhal discharge) in the womb, it may extend into the tubes that lead to the ovaries and involve them, too. Such cases are among the most troublesome and intractable that any doctor meets with. They are, doubtless, more common than they would be if women who catch this unclean contagion were early informed of the nature of the disease. In most cases, especially when acquired innocently, as it generally is by women who grace the domestic hearth, it is mistaken for a bad case of leucorrhœa, and before it is thought necessary to see a physician it has had time to extend beyond the reach of local disinfection. Any unexpected, or out-of-the-ordinary appearance of vaginal discharge is worthy the attention of one who can recognize what it means, and suggest what may be immediately necessary to be done. If the ravages of gonorrhœa can be confined to the urethra, outer parts, and lower half of the vagina, no lingering or permanent disability is likely to follow in its wake, and its cure, with proper attention, becomes complete. The critical and disastrous results are likely to follow only when the pestiferous invaders (gonococci) are allowed to go up to the private apartments and breed without limit in the womb and its tubes, whose true function may be so seriously impaired thereby as to render the patient incurably sterile.

## DISEASES RESULTING FROM CHILD-BEARING AND ABORTION.

The natural function of the female generative organs is largely responsible for the diseases of women, or to be more accurate, I should say that the management of conception, gestation, and child-bearing, directly or indirectly, causes many such diseases, and for this mismanagement women themselves are partly to blame, and largely to be pitied because so much goes wrong through ignorance. Many of their most obstinate ailments may be traced to abortion or child-bearing. Some abortions are the result of unavoidable accidents, but more are induced by medical or surgical means or by purposely over-doing, and the forced kind are more liable to do harm and leave trouble behind

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than are those which come about naturally, as it were, or because the organs are not able to carry gestation the full term. Some women get a false idea of the evils of abortion because they think they know of so many of those "mishaps" that were seemingly recovered from promptly and without disease directly following; but being unable to impart to them in language which would be free from technicality the larger knowledge possessed by physicians, it is difficult to impress them with the fact that forced abortions are dangerous and likely to lead to many forms of regrettable weakness and disease. While admitting all that is generally said to women for the purpose of dissuading them from resorting to this sort of relief from undesired burdens, whether on moral or physiological grounds, I am free to say I hardly wonder that the monotonous preaching on this subject is of so little avail so long as they are expected to act as wives, while being deprived of the knowledge whereby they may regulate the frequency of child-bearing. I am one of those who claim that women should have the knowledge and power to decide when or under what circumstances they will undertake the important function of motherhood; and I would, if the law permitted, help to put such information within the reach of all of them; but since what I regard as proper or necessary instruction regarding contraception (prevention of conception) is by law denied to them, I do not wonder that women who have conception forced upon them by law (analytically, it comes to just that) often develop a mood desperate enough to seek unlawful relief, however perilous to life and health. Custom makes them slaves; law makes them unwilling mothers! No wonder that some become distracted and do rash things in spite of the cry of the physiologist that it is physically destructive, or the preachers that it is a sin! I see but one practical remedy for this phase of social evil, and that is a fair and square admission that every woman has a right to control the function of her womb and to the best knowledge of how it may be done in marriage. And, furthermore, the recognition of the fact that the world is sufficiently populated with imperfect specimens to warrant the human family in giving attention to stirpiculture. We want "fewer and better children." We can only have such when woman can protect herself from those which are mentally and physically undesirable.

One of the good things attributed to the late Colonel Robert G. Ingersoll was this iconoclastic statement: "There is but one hope for the world: Science must make woman the owner and mistress of herself. Science, the only possible saviour of mankind, must put it in the power of woman to decide for herself whether she will or will not become a mother." And Mrs. Josephine K. Henry, commenting thereon, briefly said: "On these fateful words hang the destiny of the human race. Oh! could they but fall upon willing ears and



retentive minds of women, the mightiest revolution of the ages would be on, and woman would become an entity, an individual and helpful factor in civilization, with a sovereign right to her person, her name, her opinion, her property, and legal co-guardianship of her children would be conceded at once, and the criminal conspirators against human welfare made to capitulate to human rights."

This doctrine has been preached by the author of this volume, with more or less opposition and persecution, for forty years. It was further more advocated as long ago as 1877 in a notable address before the Liberal Club, at the Hall of the College of Physicians and Surgeons, in New York City, by Dr. E. B. Foote, Jr., the subject of the lecture being "Generation Before Regeneration," Mrs. Elizabeth Thompson, the well-known philanthropist, at that time being the president of the Club. The Rev. Henry Ward Beecher served up just about the same ideas to the parishioners of Plymouth Church a few Sabbaths afterwards, probably inspired by this same address, for he followed about the same lines, and his sermon gave so much delight to several of his hearers, the latter were said to have followed the noted preacher to his home to express their satisfaction with it. The same ideas are now becoming popular, and they are taking a firm hold upon the consciences and intellects of the most up-to-date men and women throughout the civilized world. Even the most devout believers in the saving influence of the Christian religion must admit, at the end of nineteen hundred years of unsuccessful effort in trying to raise the standard of health and morals to what it should be, with the present hap-hazard practice in reproduction, the complete salvation of the race seems quite hopeless. The salvation of mankind really depends upon right generation as well as what the Christian calls regeneration, and the former must precede the latter. Whether one believes in Christianity, Mahomedanism, or occultism, he must perceive that we must have better basic material than we now have to work with before any great racial reform can be successfully accomplished, or even the health of the human family can be greatly improved. Perhaps at the present time women are doing as much to invite their diseases by injurious means of contraception as by abortion. The law is more effective in restraining needed criticism of bad methods than it is in restricting the vice of such methods. Daily I am consulted by women who have injured themselves by cold injections or solutions of too strong disinfectants, or by incomplete intercourse (onanism). Only a few days ago I examined a young woman who had employed such strong injections that the vagina was as dry as parchment and as hard almost as boot leather; but thousands will continue to do just such things, many even when they know the harm, until lawmakers awaken to the sense of the situation, and make it possible to advise better methods than those commonly known and

practised. Furthermore, I am not infrequently consulted by women now ready and very anxious for child-bearing, who have been rendered sterile by long resort to some injurious method of prevention such as I have above-mentioned.

### Derangements of the Monthly Flow.

Every little girl should be early informed by her mother or guardian, that at some time during her girlhood, if her system is in a healthy condition, a flow of blood will appear from the sexual organs and recur once in about every four weeks. This function is termed menstruation. For want of proper information in this matter many a frightened girl has resorted to every conceivable device, to check what she supposed to be an unnatural and dangerous hemorrhage ; and thereby inaugurated menstrual derangements which have prematurely terminated her life or enfeebled her womanhood. I have been consulted by women of all ages who frankly attributed their physical infirmities to the fact of their having seated themselves in a snow-bank, applied ice, or made other cold applications locally in their frantic endeavors to arrest the first menstrual flow ! Intelligent mothers, who in girlhood, escaped this ignorance, this crime against Nature, and this penalty, I beg of you, as you value the health and happiness of your daughters, not to take it for granted that they will be as fortunate as you have been, but take it upon yourselves to discharge your whole duty to them, and impart such information in regard to their physical functions as will insure their safety.

Menstruation commences generally between the ages of twelve and fourteen, and there are all kinds of unaccountable variations from this rule. In the year 1858 there was living in the town of Taunton, Mass., at the public charge, a mother who was not quite eleven years of age ! One instance came under the author's observation in which the menses made their appearance at the age of only three years, and accompanying the premature advent of this function, was the development of the breasts as at the age of puberty. Another wherein a young woman married at the age of seventeen, and died childless with consumption at about thirty, without having had a menstrual flow, or any known affection of the uterine organs. No examination was made after death, but it was altogether probable that there was some obscure malformation of the upper part of the womb, the Fallopian tubes, or the ovaries.

Immediately preceding the first appearance of the menses, girls, reared according to the customs of our as yet imperfect civilization, feel considerable languor, aching in the back, pains in the limbs, chilliness and restlessness ; and, if they come on tardily, pressure of blood in the head, headache and dizziness are usually experienced. The estab-

lishment of the function gives relief, and if the person possesses an average degree of health, the flow will take place with uniform periodicity, without unpleasant symptoms, until what is called the "change of life," except when interrupted by child-bearing and nursing; and occasionally an instance is met with wherein pregnancy does not put a stop to the menstrual flow.

"Change of life" is when Nature terminates the menstrual function, and woman becomes emancipated from the pains, anxieties, and cares of child-bearing. This takes place in some cases as early as thirty, and as late as fifty-five or sixty; but in most cases, not far from forty-five. A statement appeared in one of the daily journals a few years ago, that a woman in Batavia, N. Y., was safely delivered of a male child at the age of sixty-four years! "Extremes meet," when we place this case in contrast with the one mentioned a moment before of the little girl having all the functions of womanhood at the age of three years! Change of life often takes place prematurely in persons who have suffered long from physical weakness. In these cases the flow will make its appearance irregularly, at intervals of several months, and greatly aggravate all difficulties previously existing.

It was once generally supposed, and the same opinion is now entertained by many, that the menstrual flow is in some way produced by the detachment of ova or eggs from the ovaries. Physiologists thus believing, claim that pregnancy can only take place a little before, or a little after, the menstrual period. But every physician in large practice who has been disposed to give the matter investigation, finds that the ova are developing and descending at no regular period, and that nearly all women are liable to become pregnant at any time. If the two germs coalesce, some few hours or days before menstruation, it may obtain sufficient development and attachment to the walls of the uterus, to remain. But it is unphilosophical to suppose that either the zoö-sperm or ovum singly and alone could effect lodgement in the womb when the cavity of that organ is copiously drenched with blood. No, it is evident that the only relation that menstruation sustains to ovulation is, that the excessive presence of blood in the female generative organs, once in about twenty-eight days, stimulates the generation of the female germs. The blood that passes off, exudes from the congested vessels of the womb and from its walls, just as profuse perspiration sometimes bathes the brow, trickles in rivulets down the face, and runs in a stream from the chin. And this profuse exudation is sufficient to sweep everything from the cavity of the womb, excepting a fœtus which may have obtained sufficient development to possess at least the rudiments of a placenta attached to its walls.

"What is the use of menstruation," some one may inquire, "and what part does it perform in the physical economy?" The doctors

do not essay a reply to this question, and it is consequently presumable that they do not know. They look wise but they do not say anything. It is perhaps one of those secrets that should not be divulged to the public! I have a theory and I am going to present it: **MENSTRUATION IS NATURE'S WASH-DAY.** The ovaries above the womb carry on a pretty extensive manufacturing establishment, and throw off the ova and the waste matters, or chips, through the Fallopian tubes into the cavity of the uterus. While this work of generation is going on, Nature has a wash-day once in about four weeks and, pouring the blood into the womb's cavity, washes its walls, and empties all outside; and in order to waste no vital material, the poorest blood in the circulation is used for the purpose, for menstrual blood possesses none of the vital properties peculiar to that taken from the arm, or to that which escapes when hemorrhage occurs. While pregnancy exists, house-cleaning is generally laid aside, for a period of about nine months, and if the activity of the glands of the breast is sufficient to arrest the production of germs in the ovaries, wash-days are not resumed until the mother has weaned her child, and the suspension of the manufacture of milk in the breasts allows the ovaries to return to their work. When, at forty-five, or thereabouts, the shop is permanently closed and ovulation ceases, there is no further necessity for the wash-days, and the menstrual function disappears.

The breasts and the uterine organs of the female exhibit the most intimate relationship. When menstruation commences in girlhood, the breasts at once begin to enlarge. Diseases of the womb or ovaries often give rise to pain or aching in the breasts. Barrenness, arising from inactive ovaries, arrests the development of the breasts, and in some cases causes the latter to shrink away to simply the prominence of the nipple. I once examined a case of suppurating tumor in the breast of a woman who informed me that when the tumor discharged daily, she did not have her menses, but when it dried up, the menses appeared regularly, and that there had been for several years an alternation between the tumorous and menstrual discharges. With these necessary preliminary observations for the proper understanding of the subject, I will now proceed to speak of the derangements of the menstrual flow.

#### IRREGULAR AND PAINFUL MENSTRUATION.

Irregular and painful menstruation is among the most common of the many menstrual derangements. I group irregular and painful because these symptoms usually present themselves together, although cases of irregular menstruation do occur without pain, and of painful menstruation, without irregularity. Irregular menstruation may result from the deficiency of blood in the system to perform the function

as often as once a month, and in this case it may take place without pain. Painful menstruation may arise from inflammation or other disorders of the womb, in cases where Nature is strong enough to force all barriers, and present the periodical flow with mathematical regularity. In most cases, however, those causes which are sufficient to produce one, are such as may induce the other.

In some young women the menses are obstructed because the hymen has not been ruptured, or in consequence of the aperture of the hymen being too small to allow the free passage of the menstrual blood. Then, partial retention and decomposition of the menstrual blood poisons the general circulation, and the impurities so generated and absorbed return to inflame and congest the womb, so that in a little time the menses do not make their appearance periodically, or without pain, even after the hymen has become ruptured. The same condition of things has often been produced by checking the menses in the manner alluded to in the first part of this essay, and by contracting colds just before or during the flow. Strictures obstructing the orifice through the neck of the womb are often the cause of painful derangements of the menstrual function. Sometimes the strictures are spasmodic, occurring only at the time of the function. Anything, in fact, which may obstruct the orifice leading to the cavity of the womb, is liable to disturb the regularity and freedom of the menstrual flow. Ulcers in the neck of the womb may do this, and so may any tumorous formations therein. In some cases the womb becomes so displaced that the menstrual function is interfered with. For instance, if the womb be so fallen as to imbed the mouth of that organ in the back wall of the vagina, the outlet is as effectually stopped as is the mouth when the hand is closely pressed over it. In such a case as this, the womb becomes engorged with blood before it forces the outlet, and then it passes out sluggishly and in a way to cause the person so affected much distress. In all cases of ulcers or tumors, impurities of the blood give rise to them, and the predisposing cause of displacements of the womb is want of vitality in the vascular fluids, with which to give strength to that organ, although other causes may have immediately precipitated the difficulty. Congestion and inflammation of the ovaries and womb are frequent causes of painful and irregular menstruation, and these, with the causes previously alluded to, are the ones most commonly encountered in medical practice.

Among those causes which appear less frequently, I may give as examples—polypi of the womb, hardening of the inner lining of the uterus, and the periodical shedding of the lining of the interior cavity of the womb. In cases coming under the head last mentioned, the lining, in some instances, comes away almost complete; in others, it is broken into strips or shreds. Then, cases are met with of fruitless

women who become pregnant so far as the union of the zoöperm and ovum are concerned, and Nature makes an effort to retain the germ of a new being, but either because of inflammation or weakness of the procreative organs of the female, or in consequence of want of vitality in the fœtus itself, it simply protracts the appearance of the menses for a few days, or a few weeks, when suddenly the flood-gates are opened and the menses make their appearance out of season, and in some cases attended with great pain.

Immoderate flowing, or flooding, may arise from irritability or inflammation of the womb, and when protracted, there is evidence of continued inflammation and congestion. Women of strong amative passion are more predisposed than others to a difficulty of this kind, although instances are not wanting of those possessing little or no passion being thus affected.

Insufficient or slight menstruation may also arise from inflammation and congestion of the womb. In some cases the inflammation may be so great as to nearly or quite obliterate the cavity of that organ, or to obstruct the outlet, in which case the flow is slight and labored, and in many instances protracted. Slight menstruation may arise from a bloodless condition, the person so affected having really too little blood to perform the function properly. Cases of this kind often suffer from great depression and lassitude at such times. It seems as if the nervous forces and vascular fluids are barely sufficient to carry on the daily work of the body, and when this extra work is added, it can hardly be accomplished. It is as if an engine is producing just enough steam to revolve a certain number of wheels in a factory and an extra belt and wheel are added, when all at once the whole machinery moves sluggishly, and as if about to stop.

#### SUPPRESSED MENSTRUATION.

Suppressed or delayed menstruation may arise from an aggravation of any one or more of the causes already stated in the foregoing ; or, it may occur in consequence of conception. If the cause be disease and the person be not bloodless, the face is usually flushed, the head congested, while headache, vertigo, and more or less pain in the ovaries, womb, and back are experienced. If the suppression is not overcome by the healing powers of Nature or by proper treatment, hemorrhage of the lungs may take place with the same periodicity that menstruation should appear ; or the blood may flow every month from the nostrils, mouth, eyes, stomach, or from the rectum. If suppression be caused by pregnancy, the common symptoms are a gradual change in the redness around the nipple to a purple color ; enlargement of the breasts and abdomen ; sickness at the stomach in the morning ; unaccountable aversion to some article of food previously much relished ; and longing



for something little thought of before. All of these symptoms do not usually manifest themselves in one case, for while nearly all women in this condition have the first three, the others are distributed about, according to individual peculiarities. Then, again, the fact should not be overlooked that other causes may produce these very symptoms. For instance, dropsy may enlarge the abdomen and breasts and arrest menstruation. Tumors in the womb or ovaries may produce the same results, and the disturbance of the menstrual flow, by any one of these causes, may induce some one or more of the other symptoms which usually attend pregnancy. Even physicians are sometimes obliged to wait and let time determine the question. It may be asked: "What can be done in such cases?" My reply is, give only such remedies as will have a tendency to strengthen and impart health to the procreative apparatus. Indeed, in no case should remedies be given to force the menses. This is the common method of treating such difficulties, I know, but not by any means a safe one; and no physician can reasonably excuse himself for the act of effecting abortion on the plea that he did not positively know pregnancy existed in a given case. It is sufficient, and much better for the patient, to use remedies that have a tendency to impart health to the womb, ovaries, and contiguous organs. This treatment can do no harm when pregnancy is the cause, and will allow it to go on to the full natural period with no injury to the fœtus, while in cases of disease, if properly selected and prepared, they will remove the obstructions and prepare the circulation for the function so that Nature will be enabled to resume it at as early a day as possible without disturbance to the general health.

Menstrual derangements should never be neglected, for in all cases, excepting suppression by pregnancy, they lead to other diseases which are liable to prove troublesome, and perhaps fatal. In women of slender figure they are apt to attend consumption of the lungs; in those of full habit, they are liable to cause affections of the brain, liver, heart, and stomach, predisposing these organs to congestion and the person affected to apoplexy. In many cases, when neglected, they induce hemorrhages of a troublesome and dangerous character. Answers to the questions given in another place in this book will enable the author in all cases to discover the causes and suggest the best means of overcoming them. (See page 761.)

#### **Leucorrhœa.**

By some this disease is called *fluor albus*; but, among women generally, it is better known by the name of "whites." It exhibits itself usually at the outset by a slight discharge of a thin, watery fluid from the vagina. In time this discharge thickens and becomes more copious.

In its advanced stages it may present a green, a yellow, a brown, or a florid appearance. Often in one case the discharge will change from time to time not only in its color, but in its consistency and quantity. The disease is usually accompanied with a great degree of lassitude, particularly in the morning; fainting, variable appetite, palpitation of the heart, shortness of breath, paleness, dark circles around the eyes, pain in the back and loins, and, in many instances, smarting of the water, as in a case of unmistakable gonorrhœa. Indeed, in aggravated cases, it possesses all the acrimony and characteristics of the last-named disease. As I have already referred to the similarity of gonorrhœa and leucorrhœa, when the latter possesses peculiar acrimony, I need not repeat it here. What I allude to is presented under the head of Gonorrhœa and Stricture in the preceding chapter. Considering the infectious qualities of leucorrhœa in many instances, it is well to suggest to married people in this connection, not to be too suspicious of each other when something having the appearance of gonorrhœa presents itself. I have on several occasions been called upon by men suffering with discharges from the urethra, who were jealous enough to suspect their wives of infidelity. On the other hand, I have been consulted by women, who on the first appearance of an acrimonious leucorrhœa imagined that their husbands had been up to something not exactly consistent with matrimonial fidelity. An excellent imitation of gonorrhœa may be often worked up between husband and wife when one is scrofulous. If both parties possess a scrofulous diathesis, the chances are still greater that a troublesome affection of this kind may be generated.

Leucorrhœa is a disease which is generally very prostrating in its effects. Now and then a woman may be met with who preserves all the bloom and exuberance of health while a discharge of this kind is going on daily; but these are rare exceptions to a general rule; for, in by far the greater number of cases, the difficulty is attended with all the symptoms peculiar to it, and in time with those of a more distressing character. The constant drain, if not checked, leads to general uterine derangements: irritability of mind, nervousness, hysteria, difficult respiration, and consumption. It is, indeed, an affection in women corresponding in many respects with spermatorrhœa, or involuntary seminal emissions in men; and it gradually undermines the constitution of females who are its victims.

The predisposing causes which produce leucorrhœa are vascular impurities and nervous derangements, and then there are exciting or immediate causes, the most common of which I will examine. (I may add here that all exciting causes derange the nervous and vascular health, and that consequently there exists a reciprocal relation between predisposing and immediate causes.)

It is humiliating to say that masturbation among young women is a prolific cause. But the truth should be told for the benefit of those who, from ignorance of its consequences, are slaves to the vice, and nowhere can it be revealed so appropriately as in the pages of a medical work. Under sixteen or eighteen years of age, girls are not so much addicted to the pernicious habit as boys; but after that age, and until marriage, the rule is reversed. This anomaly can be accounted for. Rakish young men are always admitted to good society, while the appearance of wildness among young women awakens the bitter tongue of slander, which only the most modest and retiring demeanor on their part can silence, while defiance to it banishes them from all good society. Thus the hot blood of budding man and womanhood, stimulated by exciting food, drinks, and condiments, leads the young man to the embraces of the harlot, and the young woman to the vices of the secret chamber, so that the former sacrifices his moral sense, and the latter her physical bloom and health. True, the young man exposes himself to a fatal inoculation of venereal poison; but with all this risk, his vice, so far as the mental and bodily health is concerned, is the safer.

I remember being consulted by a father concerning the poor health of his two daughters, aged, respectively, twenty-two and twenty-four years. From the description of their cases, they appeared to be physical wrecks, suffering with almost every complication that ever afflicted poor mortals. I saw by an analysis of their symptoms, that although nervous and vascular disturbances were the present causes of their complaints, self-abuse had induced these. I informed the father as to the nature of the present causes, but to spare the feelings of the young women, I dropped a private note to each of them, revealing the whole truth in regard to the terrible vice which was destroying them. With commendable frankness they responded to my letters, acknowledging the accusation, and informing me of their ignorance of its hurtfulness. They further stated that they had long been troubled with leucorrhœa, and that they were even disturbed with lascivious dreams, from which they were awakened in the highest state of amative excitement. Many similar cases have been presented to me for my opinion and medical aid, but never before any so hopeless as those I have just mentioned, for they were on the verge of insanity, and already affected with occasional mental hallucinations as terrible as those which attack the degraded inebriate.

Sexual excesses among the married, bad habits for the prevention of offspring, co-habitation with uncongenial husbands, for whom no love is entertained, sedentary habits, retention of part of the menstrual blood in the folds of the vagina, are also among the immediate or exciting causes of leucorrhœa.

If proper regard were paid to cleanliness (excuse me, ladies, but it is so), there would be much less liability to this debilitating distemper. Every female who has arrived at the age of puberty should thoroughly syringe the vagina with pure tepid water *every morning*, excepting while having her menses, and at the same time apply plenty of soap and water to the labia or lips of the vagina, for there are located about the clitoris and contiguous parts, glands and follicles which secrete an oily fluid for the preservation of their moisture. If this secretion is allowed to remain too long, it undergoes a chemical change, which imparts to it not only a disagreeable odor, but an acrimony which is liable to induce irritation. All oily substances become rancid and disagreeable by age and neglect, and these secretions, provided by Nature for moistening, softening, and preserving the health of these parts, are subject to the same law. When the vagina and labia are kept cleanly, they are as pure and as sweet as the mouth and lips of the face when they are properly taken care of.

In a previous edition of this work I spoke adversely to an excessive use of cold water in the vagina immediately after the copulative act, for the prevention of conception, and I may call attention to this point again. In order that I may not appear inconsistent, let me here explain that immediately after great amative excitement, the nerves of the procreative organs and the lining of the vagina are in an unfit condition to receive a deluge of any fluid. If the fluid be cold, it gives a shock to the excited nerves which, if frequently repeated, in time deadens their sensibility. When, however, the nerves and membranes of these organs are not under the influence of amative excitement, or just recovering from it, they may be cleansed as frequently as the mouth may be, not only without injury, but with decided benefit. Within two days after the cessation of the flow of the menses, there should be a general drenching of the walls of the vagina with castile soap-suds, followed with clear water, so as to remove every particle of menstrual blood that may linger, and then every day until nearly time for the menses to reappear, copious injections of tepid water should be made to preserve the healthiness and cleanliness of the parts. A medical gentleman of considerable repute—an able writer and successful practitioner—having read the foregoing advice in an early edition of this book, seemed to think so much washing tended to remove the necessary secretions for the proper lubrication of the parts, and we had a heated discussion on the subject. Doctors proverbially disagree. Thinking an intelligent *woman's* opinion would settle it, he wrote to one who has acquired not a little prominence as a medical writer and lecturer on medical and hygienic themes, and on receiving her frank and pronounced reply he was fair enough to show the same to me. Not mentioning name, I shall reproduce it here *verbatim et literatim*. "No,"

she says to her medical friend, "I cannot and do not agree with you on the proposition you mention. Dr. Foote is right, and I *know* it. The secretions you seem to think should not be disturbed, are excreta in the same line with ear-wax and the mucus in the nose, and are usually as disagreeable to the olfactories as the aroma under the arms and in the groins of females who do not wash. My testimony is, that the bathing daily of the feminine privates, both by external washing and by internal syringing, is the greatest tonic possible, not to the sexual apparatus alone, but to the whole woman. On receiving Dr. Foote's advice, I tried it, and find that in my own case, at least, it *rests* me up as nothing else can. Don't ask me why, for I candidly confess I do not know, but when fagged out by long exercise, mental or physical, the washing process sets me up again exactly as washing one's face drives away the sleepy feeling and gets the eyes open. After a cold wash—I prefer cold water, but advocate lukewarm for the inner application, with hot water and soap externally, followed by a cold water finish—I feel as frisky as a French dancing-master, and am ready for anything. I am sure that water and soap is needful to keep a woman sweet and clean, more particularly in those parts of her body where the secretions are natural and where the parts are folded within themselves, so to speak. Being scrupulously clean, she has taken the first step toward health, and the having and holding process. I most heartily indorse all that Dr. Foote says, from my own personal experience, and believe his advice is good for all women as well as for a live one, like myself." This verdict, from a scientific woman, ought to settle the question, especially when I inform the reader that hundreds of patients have given similar testimony after following this advice, perhaps I might say thousands, but I do not wish to speak extravagantly. "But, Doctor, you would not thus advise unmarried women, would you?" Certainly I would, simply because it is just as necessary for them as for married women. Health is of more consequence than the whims of society. As I am a physician, I shall not feign ignorance of the anatomy or structure of the orifice of the vagina in young women, nor shall I, as an inhabitant of this mundane sphere, where a great many funny customs and foolish notions exist, overlook the supposed evidence of virginity which young husbands in their own immaculate purity (?) usually expect to find in their newly made brides. Nor can I, in justice to my views, ignore the fact which my extended observation as a physician has presented, that many a young husband has been disappointed in finding such evidence, when his bride was as innocent as an infant and she, consequently, the victim of the most unjust and shameful suspicion.

It is a custom more in keeping with the drolleries and phantasms of the barbarians than with the common sense and scientific light of



the twentieth century, to esteem those only as virgins who have an unruptured hymen. The *Lex Africanus* describes one of the wedding-customs of the Africans, as follows: "After they were married, the bridegroom and bride were shut up in a chamber while the wedding dinner was preparing, and an old woman stood by the door to receive from the bridegroom a sheet having the bloody tokens of the wife's virginity, which she showed in triumph to all the guests, and then they might feast with joy; but then, if there was no blood to be seen, the disappointed guests went home sadly without their dinner." Now, this custom, although revolting to people of intelligence, is excusable in heathens; but does it look well for those enjoying the light of civilization to so far imitate it as to require an unbroken hymen as an evidence of virginity? Physicians know it is a very fallible test of virginity; that the hymen is often ruptured by various accidents; that cutaneous eruptions near the labia many times exist of such an irritating nature that the hymen is broken by the incessant scratchings of the victim; that the hymen is often destroyed by surgical operations in childhood; that sneezing, coughing, violent straining, and any number of other causes may break it; that the test is in fact *no test at all*, and only subjects those who happen to have the hymen broken to unjust and cruel suspicion. While writing this chapter I was called upon to examine a little girl only seven years of age, whose hymen had been destroyed in consequence of an irritating eruption on the labia causing her to scratch and frictionize the parts, even in her sleep, and I could mention many other instances coming under my observation in which the hymen had been destroyed by the same cause or by accident. Why, then, preserve the hymen? Why regard it as an evidence of virginity when such a test only excites mortification and a sense of disgrace in a large proportion of all young females, not a small number of whom have always been chaste and unexceptionable in their character? Besides, the mortification of a broken hymen only falls on those the most innocent, and such as have become the least acquainted with the vices of the world. The courtesan and mistress, and even respectable young women, who have eaten of the fruit of knowledge and trespassed against social statutes, know how to resort to deceptive means to throw off all suspicion when they are married. As a rule, those spinsters who are "fast" enough to have carnal connection with a man, are also sharp enough to avail themselves of such means, while only those who have been innocent of illicit intercourse enter marriage so unsophisticated as to be ignorant of these things.

In asserting that the hymen is a cruel and unreliable test of virginity, I do not stand alone. Every intelligent physician, particularly in extensive practice, knows the fact, if deference to popular prejudice leads him to conceal it. Many have frequently proclaimed it. Pancoast

states: "The presence of the hymen was formerly considered a certain test for virginity, on account of its being ruptured during coition. This idea has long since been repudiated, for it is not infrequently lost through accident, disease, etc. In many instances it does not give

FIG. 194.



FEMALE INTERNAL ORGANS EXPOSED.

u, the vagina, and above it the uterus;  
a, the bladder, r, the rectum; s,  
stomach; x, intestines.

without its destruction. *It is, therefore, of no value as a test.*"

Dr. Parr states: "The hymen naturally shrinks with years, or is torn by straining, and often disappears at an early age. *It can, therefore, be no proof of virginity.*"

Dr. Wilson remarks, that "the hymen *must not be considered a necessary accompaniment of virginity, for its existence is very uncertain.* When present it assumes a variety of appearances; it may be a mem-

way in the first or subsequent connections and pregnancy. In such cases the spermatozoa of the male work themselves through the opening of the hymen, and finally pass up through the vagina, uterus, and into the Fallopian tubes, where impregnation occurs. Therefore, medical writers no longer regard the presence of the hymen a proof of chastity or its absence a proof of immorality."

Dr. Ferguson says: "The sides of the vagina are in contact ordinarily, but it is capable of enormous distention and of again returning to its natural size. The opening is closed by a fold of the mucous membrane, which is called the hymen. This membrane is easily ruptured, or it may become so relaxed as scarcely to be perceptible, *which will account for its rarity in adults.* From very early times it has been made the test of virginity, its absence being considered conclusive proof of sexual intercourse having taken place. Modern investigations have proved, not only that it may be destroyed by many causes unconnected with sexual indulgence, but that intercourse may take place, followed by pregnancy,



branous fringe with a round opening in the centre ; or a semilunar fold leaving an opening in front ; or a transverse septum leaving an opening both in front and behind ; or a vertical, bored with an opening on either side."

The natural purpose of the hymen is to protect from colds and exposures the sensitive sexual organization of the female before the age of puberty, for until this is sufficiently developed to perform the menstrual function it is extremely delicate. We see similar protective provisions throughout Nature. The "leaves of the common chickweed approach each other in pairs, so as to include within their upper surfaces the tender rudiments of the young shoot." The bud of every flower is so enveloped as to protect its delicate internal structure till maturity, when it bursts forth with its fresh beauty and imparts delightful fragrance to every passing zephyr. Nuts of every variety are provided with an outer burr or shuck to protect them in their embryonic state, and by the time the autumnal frosts come, the shell which contains the meat becomes strong enough without protection, so that the outer one can be dispensed with. Many other illustrations of this impression might be given.

It is difficult to tell how much the hymen may have to do in shielding the procreative organs of females from exposure and disease, during the early period of their development. But the age of puberty, indicated by the appearance of the menses, is one in which the hymen may be altogether dispensed with ; for whether accident or marriage happens to the young female within six hours or six years after the appearance of the menses, it is certain her reproductive organs are fully matured, and that the hymen has fully subserved its purpose. In some cases the hymen proves so great an obstacle to the flow of the menses that the whole vaginal canal becomes blocked up, when hysteria and other spasmodic affections ensue. Under such circumstances it must necessarily be ruptured, and, when very strong, with the knife of the surgeon. When the hymen remains unbroken until after marriage, it occasionally occurs that it has become so cartilaginous by age that the vagina cannot be entered, in which case the unfortunate bride is obliged to submit to a surgical operation for its removal. Now, if this membrane was not so carefully protected and valued, such annoyances as these would be avoided, while the hundreds and thousands who have, by accident, ruptured it, would not be the objects of crushing suspicion on the part of those who possess so little anatomical knowledge that they are not aware such accidents ever happen. The commencement of menstruation marks a new era in the life of a female. She becomes more graceful in her manners ; her face changes ; her breasts rapidly develop ; she loses her childish airs and becomes more attractive and womanly. It is then that she should be treated as

a woman, not only socially, but hygienically and medically. The hymen, if it still exists will have subserved its purpose.

The menstrual blood was supposed by the ancient Jews and the medical men of Arabia, to possess peculiar malignant properties, and in some countries the laws and customs required that females should be cloistered during the menstrual periods. In Isaiah xxx. 22, the writer speaks of the defilement of graven images, which shall be cast away as a menstruous cloth ; and in Ezekiel xviii. 6, and xxxvi. 17, allusions of the same import are made. "It was formerly supposed, and so stated by Pliny and others, that the menstrual blood contained principles of a noxious and poisonous character. Pliny informs us that 'the presence of a menstrual woman turns wine sour, causes trees to shed their fruit, parches up their young fruit, and makes them forever barren ; dims the splendor of mirrors and the polish of ivory, turns the edge of sharpened iron, converts brass into rust, and is the cause of canine rabies.' "

While I have no respect for antiquated notions, unless sustained by reason and philosophy, I am disposed to agree with these ancient views so far as this : that the menstrual blood becomes acrimonious if it is permitted to remain and decompose in the folds of the female vagina, and that leucorrhœa and ulceration of the vagina or womb are often the results of the excoriating properties developed by particles retained in the vagina, and particularly in that of young females, whose hymens have not been ruptured. My observation fully sustains these conclusions, but I do not think the menstrual blood malignant or injurious, if a woman takes care that the vaginal cavity is cleared of all relics of the fluid.

Mankind entertain a thousand whims, and I am not disposed in this work to meddle with any which do not interfere with cleanliness and good health ; but I consider it my prerogative to attack those which do interfere with physical development, and the comfort and health of the human race ; and I cannot but regard that one which leads a young husband to suspiciously and sneakingly seek to know if his young bride has an unruptured hymen, as humiliating and degrading to all the nobler attributes of a moral and intellectual being. My advice, therefore, is, that single females, as well as married, should keep the vagina cleansed of every decomposing particle of menstrual blood, and that the female syringe should be thoroughly used within forty-eight hours after the menses have ceased. The more efficient the instrument used the better. In fact, the common glass and metallic syringes are little better than none. The various patterns of India-rubber syringes are the best, because they can throw such a volume of water, and that, too, with so much force, that every particle of decomposing blood can be washed away. The annexed cuts represent the best articles of the

kind, considering simplicity and little liability to get out of order. They should find a place among the articles of every woman's toilet-room.

Young unmarried women, of course, value (or at least should) as of first and paramount importance in the regulation of their customs and habits, the advice of intelligent mothers. I would not urge upon them the use of the syringe at the end of each monthly period without the consent of their maternal guardians. But may I not hope that sensible mothers, who watch with anxious eye the first symptoms of disease and decline in daughters just blooming into womanhood, will take a practical view of the hints I have given, and advise them to regard more scrupulously the requisites of health than the morbid and foolish notions of sensual mankind ! As for married women, there is no possible excuse for their non-observance of the most rigid rules for the maintenance of cleanliness. They should use the female syringe very thoroughly at the end of each catamenial flow, with soap and water, and then daily with pure water, as before directed.

The use of astringent injections is the most popular mode of treating leucorrhœa, but however much relief may be obtained in this way, it is usually of the most temporary nature, unless accompanied with such medicaments as will improve the general health and impart vitality to the whole procreative system. A bad case of leucorrhœa is of quite too threatening a nature to trifle with ; and, in its incipient stages, it had much better receive skilful treatment, for it is liable at any time to assume a troublesome and prostrating form, which may end in premature decline.

FIG. 195.



FAMILY SYRINGE.

FIG. 196.



VAGINAL SYRINGE.

### Falling of the Womb.

This difficulty may almost be said to be coexistent with civilization. Travellers report that among the women of savage and semi-barbarous countries this affection is hardly known. This fact, taken in conjunction with the proverbial one that falling of the womb is a prevalent disease with women living under our system of society, furnishes a subject worthy of the consideration of medical men, social reformers, and of those who have the good of humanity at heart.

When the abdominal muscles, or those of the womb itself, become relaxed by insufficient nervous stimuli ; when the vagina becomes weak through the debilitating effects of leucorrhœa so that it fails to do its part in sustaining in its place the organ suspended within its

walls ; when a pernicious fashion induces a woman of not very strong muscular organization to compress her waist so as to press down the stomach and bowels below their normal position ; when constipation engorges the intestines with fecal matter so as to produce a pressure at the top or back of the womb ; or when a pregnant female, bound on expelling from the uterus the embryo of a human being, resorts to some means to effect abortion ; through any one or more of these causes, the

FIG. 197.



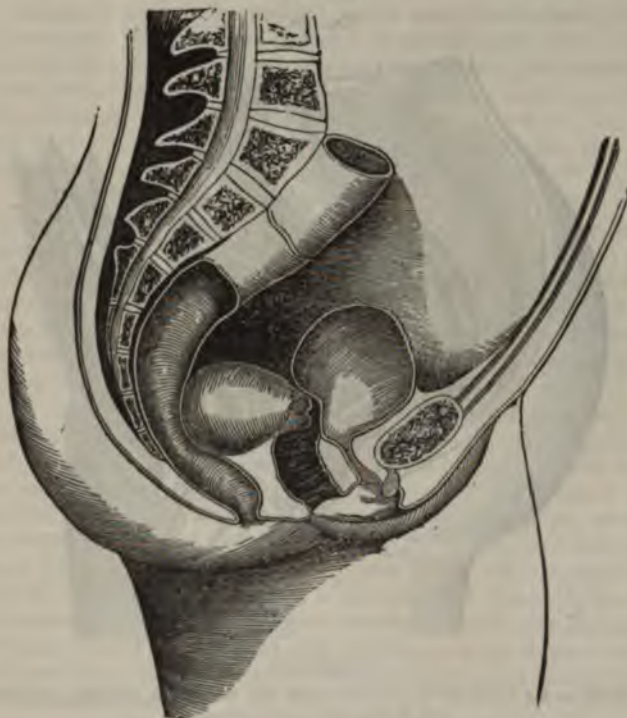
THE WOMB FALLEN FORWARD ON THE BLADDER.

advent of a distressing disease, usually termed prolapsus uteri, may very reasonably be looked for. Although more common to married women, the unmarried are not exempt from it. If correct statistics of the prevalence of this disease could be presented, they would astonish the reader.

The position of the womb when it is prolapsed is various. In some cases it falls over to one side or the other ; sometimes it turns almost a complete somersault ; in a few cases there will be found to be a pro-

lapsus not only of the womb, but of the vagina, so that the neck of the womb absolutely protrudes; in some cases it is found to lie crosswise—the top pressing one side of the vagina, and the neck the other; or the neck may press the back wall of the vagina while the top lies against the front wall, or vice versa. In most cases the womb falls either forward or backward, keeping rather more of an oblique than a

FIG. 198.



THE WOMB FALLEN BACKWARD AGAINST THE RECTUM.

horizontal position. The illustration, Fig. 197, represents pretty well the position of the womb when it is fallen forward. When the organ occupies this position, the mouth of the womb is generally found to be somewhat imbedded in the back wall of the vagina. This point is not so well illustrated in the figure presented. Its position, however, against the bladder is well shown, and when in this position it causes a frequent desire for micturition. When fallen backward, as represented

in Fig. 198, it then interferes with the free expulsion of the fæces by its pressure against the rectum, thereby predisposing the one affected to constipation ; and if, as is sometimes the case in this unnatural position, the neck of the womb presses against the neck of the bladder, micturition becomes difficult, and at times painful. This may also be the case when the womb is fallen forward, if the muscular relaxation is so great as to drop the womb below the upper or main part of the bladder.

FIG. 199.



PROCIDENTIA.

The womb so far fallen as to protrude from the body—the extreme possibility, and, fortunately, not common.

The common symptoms of falling of the womb are dragging or bearing-down sensations in the lower part of the abdomen ; pain and numbness in the limbs ; weakness in the loins and lower part of the back ; general debility, and nervous irritability. I say these are the common symptoms, but I should here mention that I have often encountered cases of prolapsus of the womb in my practice, in which there were no unpleasant local symptoms whatever. The displacement had occurred at such an early age that the system had been made gradually to tolerate its unnatural position. In these cases, when the physician suspects



something wrong about the uterine organs, the patient quickly informs him that she is perfectly sound in that locality ; and she has reason to think so because she has no one of the symptoms common to an affection of this kind ; but an examination reveals the correctness of her physician's opinion ; and it is generally found in cases of this kind that their ill-health proceeds directly or indirectly from the uterine displacement.

Leucorrhœa generally precedes, and in most cases attends, falling of the womb. When chronic irritation or inflammation, with more or less congestion, is also present, existence is a burden, and married life a curse rather than a blessing. Unless relieved or cured, months or years of misery, according to the endurance of the sufferer, are fastened upon her, until consumption, or some other disease, in a fatal form, forever relieves her of her physical distress.

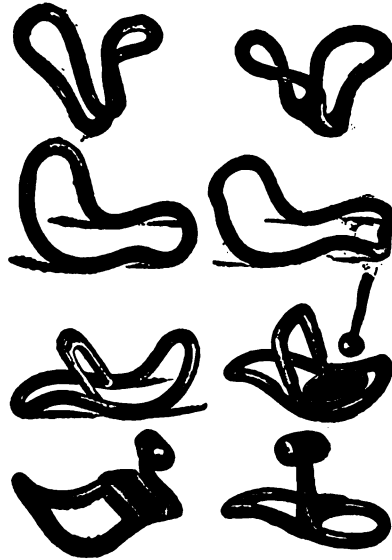
In the early stages of the disease the exercise of walking is necessary to keep up what is left of the muscular strength ; but in advanced stages this exercise is generally too painful to be endured, and in such cases frequent manipulation of the abdomen with the hand should be resorted to. All the muscles may indeed be benefited by pressure and manipulation by a healthy hand, and the *danse du ventre* may be acquired with great benefit, or, systematic gymnastics for the abdominal muscles may be practised.

To cure prolapsus, various vaginal supporters or pessaries have been invented, more for the purpose of making money than doing good. These mechanical means of support are irritating to the womb and vagina, which are so delicately organized and permeated with sensitive nerves, that constant contact with any wood, glass, earthen, or metallic contrivance used to support the parts, can only give temporary relief and ultimate injury in most cases ; while instances do occur in which the first effects are so irritating and distressing that the patient has more inflammation induced thereby. These worse than senseless things should be dispensed with entirely, and the disease treated locally and constitutionally, as the common-sense of the skilful physician naturally suggests.

It is only fair to admit that there is a great difference of opinion among physicians as to the utility of pessaries. Of course I feel sure that the eminent authorities whom I can quote as entirely agreeing with me are in the right ; and if so, there has been a great deal of inventive genius and mechanical skill thrown away in the devising of a thousand different styles of pessaries—mostly abominations ! Many physicians who employ them admit that they are only temporary expedients, and many have experimented with them for years, finally to throw them all aside. A few, unfortunately, still have them "on the brain," but their day is past. Dr. Paul F. Mundé employs them

"for temporary relief" only, and relies mainly on posture and vaginal tampons. He says in the *American Journal of Obstetrics* that "the protracted wearing of astringent vaginal tampons, introduced daily, offers for some cases of ante- and retro-displacements an excellent and for most cases of procidentia, almost the only efficient and safe remedy for the displacement, far superior to all steadily worn hard or soft pessaries. A procidentia of uterus or vagina may even be cured by

FIG. 200.



SOME OF THE PESSARIES IN USE.

several months of this treatment, if the affection be not of too long standing."

I will call upon one other witness among gynecological specialists to reinforce my opinion about pessaries. Dr. Horatio R. Bigelow, of Washington, D. C., in an article contributed to the *Medical Record* of New York, remarks as follows: "There are some reasons which almost lead me to believe that pessaries are an abomination. The resultant ease and comfort may be followed by after-suffering, and is continuous only with the wearing of the support. No permanent cure is brought about; the vaginal walls are put upon a stretch, so that they lose their contractility, and can never be relied upon

for any natural support to the uterus; the bladder and rectum are both intolerant of the pressure, and the superimposed uterus suffers at the fundus in a large proportion of cases. In retroversion I have found scores of women who complained of rectal tenesmus and pain, irritation at the neck of the bladder, and of a sore spot at the fundus, who were wearing a most carefully adjusted pessary made from exact measurement. In ante-flexion they accomplish absolutely nothing. The whole principle is wrong. Some women, especially those with lymph-adenitis, can wear no support whatever. So far as I possibly can I rely upon pneumatic pressure, replacement, and astringent tampons. In other cases I use the pessary for want of something better, but always with fear and trembling."

I can recall a case of a teacher of Boston, who wrote me regarding a uterine displacement which she had supported by pessaries for many years. After investigating it I proposed treatment which would require her, in a few weeks, to give up the pessaries altogether. To which she promptly replied that that would be impossible, as she could not walk or stand erect without their support. She seemed to have no idea of getting rid of the pessaries, but simply sought relief from the irritation and inflammation which they caused. She seemed to imagine that she was destined to be a slave to them for the period of her natural life. But the pessaries were now causing much painful inflammation, and what she desired was relief from that. I took the case for the proposed purpose, and in six weeks her difficulty was so far relieved that she could get along without these artificial supports, and in a few months she became as free from her old chronic trouble as if she had never had it. This is one of many cases I might cite to show that in supposed incurable troubles of this kind, the pessaries may not only be set aside, but the displacement for which they are employed radically overcome.

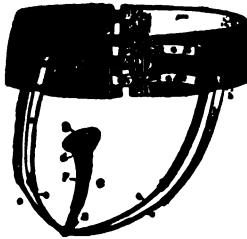
There is a pessary, however (see Fig. 201), which is not objectionable on many of the grounds herein named, and which may be found serviceable in elderly women who are so flabby or relaxed that no elasticity or tone can be restored to them, and it may be utilized temporarily in younger women until a normal tone can be revived by other appropriate means. It is a pessary that does not distend the vagina or press hurtfully on neighboring parts, but holds the womb in a well-shaped cup above, taking its support below from rubber bands which are held in place by an abdominal supporter. In many cases the outer abdominal supporter is alone sufficient, while proper attention is being given to restoring muscular tone all about this region. Some cases may need shoulder-braces also to help them regain better form, while others may be, as I have said, temporarily aided by bolstering up the womb from the inside, too. The main objection to all such bracing is that the patient may be so much comforted by it as to neglect more important and irksome means to regain conditions of permanent cure, such as proper diet, dress, exercise, and treatment. Any appreciative reader of what has been offered in the earlier part of this chapter as to causes, and who readily took it in and understood the relation of general debility and falling of abdominal organs to crowding, congestion, and prolapsus of pelvic parts, will readily see that merely to prop up the womb by any somewhat successful plan, is doing but a small part of what needs to be done to effect a cure in such cases, and it will also seem evident that to prop up the womb by any mechanical means before undue pressure is taken off above, must surely result in crowding it, bruising it, and may be, bending it out of shape. Until a woman thoroughly senses the imperative need of dressing right, and

doing all other things needful for establishing things favorable to comfort for the womb, it is hardly worth while to provide her with any kind of local treatment to improve its condition or health. When all else is being done that should be, it is often possible to get such temporary local lift as may be advisable by using a bolster of a pledget of cotton or of surgical wool covered with my magnetic ointment, or a velvet sponge, of a small, compact, firm, close-knit kind, lubricated with some soothing ointment or with vaseline.

#### Ulceration of the Womb.

This disease is common to women of a scrofulous diathesis; a venereal taint in the system may also produce it. Other less virulent impurities of the blood occasionally induce it.

FIG. 201.



DR. POTT'S SPRING-STEM PESSARY.

The neck of the uterus is its most common location, and it is attended with an offensive discharge from the vagina, and much burning heat and pain in the region of the abdomen. Aside from its debilitating, painful, and offensive effects, it is liable to lead ultimately to cancer of the womb, a distressing disease which is generally difficult to cure, particularly in its advanced stages. Taken in season, ulceration may be easily eradicated, and even cases of cancer of the womb are not always incurable. When either ulceration or cancer affects the vagina or womb, the acrimonious nature of the purulent secretions is such as to impart disease to the organ of the male in copulation, unless the membranous envelope is used.

#### Polypus of the Womb.

This is a tumorous affection characterized by the growth of fleshy fungus, which often attains great size. This disease seldom occurs except in cases which are affected more or less with scrofula. In such cases, often more than one tumor presents itself, some of which are hard and firm in their fibres, and others soft and spongy. Females affected with this difficulty are often suspected of pregnancy. I was once called upon by a lady affected with polypus of the womb, who had been pronounced pregnant by several physicians, some of whom had made private examinations. A thorough examination satisfied me at once as to the nature of her disease, and I was enabled to prescribe remedies appropriate thereto. Surgery is usually resorted to by the profession for the removal of a polypus of the womb, the operation



being similar to the one referred to for the removal of like tumors of the nasal passages. But in all cases coming under my treatment I have found constitutional medical treatment the safest and best. In one remarkable instance, attended with most frightful hemorrhages, I prevailed upon the patient to hold off from any surgical treatment for a reasonable length of time, that we might see what medicine could accomplish. She soon found the hemorrhages greatly lessened in frequency and profuseness, and in a few months she had the satisfaction of realizing the fact that the tumor had been entirely removed, and that by such means as would not only assure its permanent cure, but reasonably give promise of no more coming of the same sort. The very causes in the system which had produced this troublesome one having been removed, she got well, and dismissed all fears of further annoyance from the development of others. A little later on I shall have more to say in criticism of the too frequent employment of surgery in the cure of diseases peculiar to women.

### Dropsy of the Womb.

This is a uterine disease which is not so common as the ones I have previously considered. Occasionally, cases are met with in a large practice. This disease often leads to the suspicion that the invalid is pregnant, and sometimes physicians who ought to discriminate more correctly, are deceived by it. It was owing to the palpable ignorance of those who were considered the first physicians of England, that Lady Flora Hastings, a maid of honor to Queen Victoria, was driven in disgrace from the court. She was supposed to be *enceinte*, and being a single lady, for her to become a mother would have had a most prejudicial effect upon the character of the court. The most notable matrons and physicians were summoned to make an examination, and their decision was confirmatory of the terrible suspicion. The broken-hearted lady soon afterward died of dropsy of the womb, which had deceived her medical examiners. Greater medical stupidity cannot be conceived of! Had her physicians possessed the skill which they ought to have acquired, to wisely discharge the responsible duties of their position, the disease of the lady would have been readily detected, and her life and reputation saved. In both polypus and dropsy of the womb, the delicacy of women to

Fig. 302.



ABDOMINAL SUPPORTER,

With stem pessary attachments.

part of the physician, is mainly, if not entirely, due to the fact that those constitutional derangements which either preceded the local difficulty, or became complications after the local difficulty had made its appearance, are overlooked. In my practice I have generally found myself able to permanently cure these supposed incurable cases. I first satisfy my mind regarding the constitutional complications which coexist, and give especial attention to them at the same time I am treating the local difficulties. What I have in various parts of the foregoing essays denominated immediate, intermediate, exciting, or provoking causes of uterine derangements, may be properly termed sub-causes. The vascular or nervous system, or both of these systems, must have been antecedently deranged, to allow the sub-causes to which I have alluded, to fasten chronic affections upon these organs, unless they were directly caused by mechanical injuries, abortions, or venereal contagion; and even in these cases the blood and nervous system become involved, and then react upon the local diseases, so that perfect recovery in all cases depends upon the comprehensive treatment I have named.

Many of my patients of this class very likely get tired of hearing me advise dress reform as one of the first essentials to successful treatment. Much criticism has, in previous chapters, been given to the unfortunate features of women's mode of dress, and the general advantages to be expected if they could be removed; but it is especially when some congestion or mal-position of the womb exists that it is absolutely necessary to "let up on it." Constrictions about the waist, heavy skirts hanging on the waist for support, and excess of clothing over the congested parts, are so literally depressing in their effects on the womb that there is small chance of getting it into normal place and condition until all such evils are removed. To effect this, it is not even necessary to make any considerable change in the outer garments, or adopt bloomers. It can be effected by so altering the clothing as to carry all its weight from the shoulders, and relieve the soft abdominal region of all constriction, weight, and pressure. This subject, and other matters, relating to deformities, tumors, examinations, methods of treatment, etc., have been clearly presented in a dime pamphlet by Dr. E. B. Foote, Jr., on "Gynecology, or Diseases of Women." Those who may not have learned just what they need to know from this chapter, will very likely find it there, or, if not, the author stands ready to make up for the deficiency by freely answering letters of inquiry. The above-named pamphlet has fifty pages that might well be incorporated here, but it seems better to refer those especially interested in the subject to that monograph than to unnecessarily extend this book, already growing quite too bulky, in the attempt to cover all the matters of interest to people in general, as well as to those who are per-



sonally suffering from some one of these difficulties ; but I will allot a portion of one page more in this chapter to a quotation from the pamphlet referred to where the subject of medicine versus surgery is under discussion. Any woman who has been urged to undergo some operation, and who is in doubt as to what she would better do, should see all there is offered therein, and especially what Dr. Frederick Wallace Abbott says, in an editorial on "The Asexualization of Woman," in *The Massachusetts Medical Journal* (vol. 19, p. 478, October, 1899), before submitting to surgery.

"Probably in no branch of medical practice is there more opportunity for competition and difference in opinion between the surgeon and the physician than in this department of women's diseases," says Dr. Foote, Jr. "In looking about to see what had better be done for her relief the sufferer will on the one hand be advised to submit to some sort of surgical procedure in the way of caustic application, cutting operation or electrolysis, and on the other hand, she may be informed by some physician that he proposes to effect a cure without resort to any such heroic measures. There is no denying that there is room enough in this vast field of work for both the surgeon and the physician, for there can be no doubt that there is a large variety of cases which can only be remedied by some surgical procedure ; but on the other hand it is equally true that among this class of specialists there has been too great a tendency to resort to surgery, resulting in the employment of this method when the expedients of the physician would have been better. Many a woman has been unnecessarily slaughtered and injured by ill-advised operations, so that we have come to advise that in any case of doubt—that is, where there is any doubt at all of the necessity of it—it is better first to employ other means, with a view, if necessary, of falling back upon surgery as a last resort. Not only in these cases, but in those where operation must in the end be a means of cure, a preparatory course of treatment is usually necessary in order to fit the patient for it. Dr. J. Duncan Emmet, who recently visited Europe to discover the secret of success of its laparotomists (surgeons who remove the ovaries) writes that their low death-rate from operations is largely due to the fact that the surgeons choose their own time for such treatment, and 'pick' their patients. He says : 'Keith told me that the cases of the same disease which he considered fit for operation did not probably average one in a hundred of all that came to him.' So there are ninety-nine of a hundred cases that the surgeons will not touch, and whatever relief is for them must be at the hands of physicians." See Chapter XII.

## CHAPTER VII.

### HINTS TO THE CHILDLESS.



**BARRENNESS** is a word which designates a physical condition abhorrent to every one in married life, who has not already become a parent. The exceptions to this rule are only those who have but recently entered matrimony, or such as have not yet acquired means sufficient to enable them to undertake

the expense of rearing a young family. Whether love of children is limited or universal, the idea of being barren, is one from which every individual who has been long married, and has not at least one child to enliven the family circle, instinctively recoils. Such a condition has in all nature but one parallel, and that, the great desert

which spreads its vast expanse wearily before the eye without a blade of grass, leaf, twig, or tree to nod a welcome to the passing breeze, nor the first crystal of water to reflect in prismatic colors the golden rays of the sun. With many women, the grave is more cheerfully looked forward to than childless longevity, and not a few husbands would rather die in the prime of manhood, leaving an heir, than to live to gray old age and be esteemed incapable of reproduction. The careless world cannot know the secret yearnings of the hearts of such unfortunate persons so well as the physician; nor is the family doctor so liable to find them out as one engaged in a national practice like myself. A majority of childless married people will strive to make their neighbors think they cannot endure children, while the physician in whom they have confidence, living ten, twenty, or a thousand miles off, is intrusted with the secret of their hearts' desire. Now, I am betraying the confidence of no one in making these general remarks. I never breathe the professional secrets intrusted to my keeping, nor would I make these general allusions to them, except for the fact that those of my readers

with a houseful of babies might feel surprised to find space, however limited, devoted to the subject of barrenness.

A wife who has had four or five children, generally wishes herself barren, feeling that she has done her share toward populating the world, and she is entirely unfitted by her fruitfulness to sympathize with one, who, loving children, has none of her own to love. But, taking a serious view of the matter, however badly children may sometimes turn out, childless old age is a dismal future for the mind to dwell upon, and, having reached it, the present is no less cheerless. The hearthstone of a married pair, in the vigor of life, is electrified with the presence of the bright roguish eyes which mischievously watch the smiles and frowns of approving and reproving papas and mammas, while no vernacular is so enchanting as the hesitating and rambling utterances of "our baby" when it first begins to kill the king's English. The new father seems more dignified, and stands several inches higher in his stockings while the mother is never tired of relating the extraordinary feats and accomplishments, or quoting the wise remarks of her prodigy. Passing the meridian of life, doting parents watch with pride the developing genius of a promising son, or the unfolding brilliancy, beauty, or goodness of a favorite daughter, while the infirmities of old age are deprived of their depressing influences by the affectionate attentions of grateful children. Therefore, the desire for offspring is natural, and all honorable means to obtain them excusable. A woman who is devotedly attached to them cannot imagine how far she might go in her attempts to become a mother, unless placed right in the position of one who has spent many years of married life without a sign of pregnancy.

The female members of the human family very early give evidence of their love of children. A little girl who knows nothing of the process of obtaining a living child, nor possesses sufficient physical development to produce one, evinces her love of offspring by making rag babies, and dressing and caressing the dolls which are purchased for her at the store. As she becomes older, she loses attraction for this imitation of the real article, and loves to attend a live baby. A noble woman has said: "Motherhood is the ideal state of womanhood to every woman not arrived there. \* \* \* Woman must yearn for motherhood because she is woman."

The long and short of the matter is, no woman, in the secret recesses of her own heart, will felicitate herself with the reflection that she is physically incapacitated to bear a child. You who read this, and who, in middle or advanced age are without children, will whisper to yourselves—"This is true." Aside from the incentive to child-bearing, which proceeds directly from the love of children on the part of woman, the wife naturally fears that she will lose the affection of the

husband if, after many years of marriage, there is no issue ; nor is this fear without foundation, for instances are not wanting wherein separations have occurred simply on this account. Napoleon and the Empress Josephine present a notorious example of this kind, and probably every reader will remember some such case coming under his or her immediate observation. At least, I am confident, every physician in large practice has personally known of one or more such cases.

Considering, then, the importance of the subject, do not require me to go around that information which may be most useful to you, for

FIG. 205.



A PLAIN HOME TALK BABY.

Photograph taken at the age of two months.  
(See testimonial on page 775.)

the purpose of employing words and illustrations which cannot possibly offend the false modesty of some who are unwilling to take a sensible view of anything relating to the organs of procreation. These pages have been written for the childless by one who has given especial attention to what is popularly called barrenness, and discovered many new and useful means for overcoming the same ; but those belonging to this unfortunate

class who are at all given to prudery, should avoid even a cursory perusal of the matter presented herein. So far as the writer's observation extends, Mother Nature has provided only one process for procreation. That process may be varied to meet the necessities of various cases ; but in some way or other the germ generated in what is called the testicles of man, must be brought in contact, in the womb, with the germ generated in one of the ovaries of woman. We who call ourselves human beings, properly belong to the animal kingdom, and must consequently be controlled by the laws which govern animal life and its perpetuation. However sexual intercourse may be regarded as an act indulged in for merely sexual gratification, for the single high purpose of reproduction,

It should be considered not only free from vulgar criticism, but as one entirely chaste, and, indeed, indispensable, unless we can all adopt Shaker philosophy and theology. In fact, it is not participation in this peculiar physical contact for the main purpose of reproduction, that has led the whole affair to be privately esteemed attractive and unavoidable, and to be publicly considered disgusting; but rather excessive copulation for the mere sexual pleasure it affords. A man who gluts his stomach with rich viands and libations from his breakfast hour until bed-time, ultimately becomes dyspeptic, and when his appetite has become cloyed, and his stomach painfully sensitive, he regards nearly all food as disgusting and nauseating. Forgetful of his former habits, he is surprised at the gluttony of his more fortunate neighbors who have not yet reached the stage of diseased stomach, and he thinks the world is made up of despicable gourmands. Now, a large majority of men and women are sexual dyspeptics. In other words, they and their ancestors have drank so deeply and so unnaturally of the cup of sexual pleasure that the act designed for mankind to perpetuate themselves, and the organs which were given them to perform the function of procreation are looked upon as not only inherently disgusting, but beneath the worthy attention of a cultivated people. Sexual connection may be indulged in as an animal necessity in the privacy of the bed-chamber, or even in the abode of the harlot; but a treatise upon these organs and the most effectual plans for securing fruitfulness to those who have been denied the pleasures of maternity and paternity may not unlikely be regarded as impure, obscene, and unfit for perusal. My idea is simply this: That sexual intercourse for merely sensual pleasure, when true affection is absent, cannot be mentally or physically elevating; for the purpose of procreation, it is neither socially, morally, nor religiously debasing, but rather simply obedience to Nature's mandate. It may be entirely right, and in harmony with Nature's innocent impulses, that men and women should cohabit to a moderate extent for pleasure only. There are those who question this. It is, *certainly*, in harmony with Nature's plans that cohabitation should take place between the sexes for perpetuating our species. This cannot be questioned by a reasonable person who has not a Shaker cavity in his brain. The reproductive organs then, instead of being morally neglected and treated as too vulgar for our consideration, should be regarded as the most valuable of all our organs, and the most worthy of our care, so that they may be employed, at least, for their most important function—that of the reproduction of our kind. The stomach digests the food which supports life; the neurons of the brain give rise to various thoughts, feelings, and emotions; our eyes enable us to see objects beautiful, or disagreeable about us; our ears to hear sweet sounds or grating discords; our olfactories to smell delightful



odors or disgusting fumes; and all the other organs of the human body, excepting the reproductive, minister simply to the being who now lives; but none of them possesses the mysterious power of a creator; none can reproduce themselves; and, excepting for the procreative organs, all those I have named would cease to exist in a little time. When we consider this fact, it is hardly strange that the people of the pagan world formerly worshipped images fashioned like the procreative organs of both sexes; but it is strange that any process of refinement, or any school of civilization should have been able to lead the human family to be ashamed of them. It has been said very truly,

FIG. 206.



A PLAIN HOME TALK BABY.

Photograph taken when six months old. The mother writes: "She is a lovely baby, and we should not have our darling had it not been for you."

that "many people are ashamed that they have bodies;" and it may be still further said that nearly all are ashamed of the most complex and wonderful of all the organs of those bodies. If, as a large share of Christendom believes, this false sentiment is a result of sin—if the fall of man led him to envelop himself in fig-leaves, it seems to me that we might better all get up as soon as we can, and comport

ourselves as obedient children who have at last discovered the error of our first parents. The child may be to blame for falling, but there is not a particle of excuse for him when refusing to make the least effort to regain his feet.

Let it be understood that this chapter is intended for sensible people—for those who can look beyond the prudery of Mrs. Grundy, and appreciate the true uses of things—for true men and women who are disposed to take a scientific view of important matters, however delicate, without a too sensitive regard to the conventional prejudices to which civilization in its infancy has given rise; in brief, for those who



possess all the foregoing qualities, with a laudable desire to be happy fathers and mothers.

### The Causes of Barrenness.

I do not propose in this chapter to treat upon every possible cause, but rather to confine myself to those causes which may in some way or other be overcome. Those causes which may be put down as irremediable in any way whatever, are those arising from some congenital malformations of the organs of procreation which are sometimes met with, or some organic destruction of the completeness of the procreative system by disease, accident, or surgical operation. Among the former may be mentioned deformities of the vagina, womb, Fallopian tubes, and ovaries of the female; or testicles, spermatic tubes, or penis of the male. Among the latter may be named strictures of the womb of an obstinate character, caused by inflammation or ulceration of the cavity, stricture of the Fallopian tubes, misplacement of the fimbriated extremities of the Fallopian tubes, permanent adhesions of the fimbria to the ovaries, and a partial destruction of the ovaries of the female; and in the male, the removal of the testicles by disease or the surgeon's knife, their partial destruction by self-pollution and sexual excesses, the permanent consolidation or obstruction of the tubes carrying the semen from the testicles to the seminal vessels, and such a permanent obstruction of the canal of the urethra as to resist the propelling force of the ejaculatory ducts, causing the seminal fluids to be emptied into the bladder.

Those which may be regarded as common, and which may be obviated by some means, may be classified in the order of their frequency, as follows: *First*—Local inadaptation. *Second*—Diseased condition of the wife. *Third*—Diseased condition of the husband. *Fourth*—Excessive amateness. *Fifth*—Temperamental inadaptation.

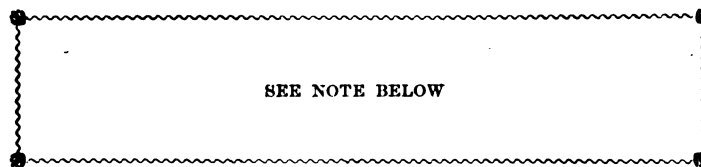
### Local Inadaptation.

This is pretty faithfully represented in all its varied phases in Figs. 207 and 208, which I have had designed and engraved expressly to illustrate this essay. No attempt has been made at anatomical accuracy in giving the form of either the male or the female organs. The obvious reason for this is to avoid unnecessary offence to what is popularly regarded as refined taste.

I am more and more convinced, every year of my practice, that local inadaptation is the commonest cause of barrenness. While it is true that some women are so susceptible to impregnation that they will conceive if the seminal fluids be but deposited within the lips of the vagina, whatever may be the position of the womb, there are very many

who cannot, unless the local adaptation is so perfect as to cause the fluids of the male to be poured directly into or upon the mouth of the womb. In an excited state of the healthy uterus, the mouth draws toward itself and sucks up at least a portion of the male fluids, if deposited near it; but this absorbing or suction power differs to a remarkable degree in women—so much so, indeed, that in some who greatly enjoy the copulative act, it is feeble and the susceptibility to impregnation slight; while in others, who enjoy the embrace but little, or possibly not at all, it is so powerful as to take up fluids deposited in any part of the vagina. It has been, and is now, supposed by many, that the female cannot become pregnant unless she enjoys coition. Even physicians used to entertain and publish this fallacy. It is a great error, for while the clitoris and erectile tissue which, by excitation, usually give pleasurable sensations, may be nearly or quite paralyzed, so that the wife is indifferent, or, perhaps, opposed to intercourse, the mouth of the womb may be active and the ovaries, where the ova or eggs are formed, fully capable

FIG. 207.



## LOCAL INADAPTATION.

*Note.*—As the illustrations originally designed for this place can only be of interest to those who are barren, and to medical men, it has been thought best, after reflection, to omit them, and then supply them by mail in letter envelope without charge, to those who may be individually or professionally benefited by their possession. Send postage. The author's address is given on page 1226.

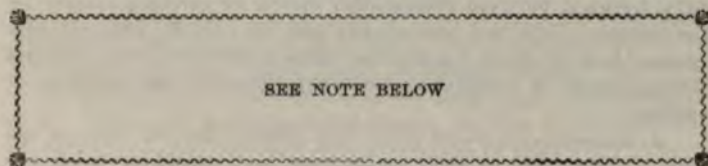
of performing their functions, so that conception will result. I have met many such cases, and have been called to explain the reason in hundreds of them. The fact is, many women will conceive by simply the injection of the male fluids into the vagina, or even the deposit of a drop of them on the lips of the vagina, when they are not under a particle of amative excitement. On the other hand, a woman may be excessively excitable, amatively, and keenly relish the embrace, when she is not susceptible to impregnation. One reason for this is, that while the clitoris and erectile tissue may be full of animation and susceptibility, the mouth of the womb may act sluggishly, and, in some cases, the ovaries in addition, may be at fault. Another reason will be presented before the conclusion of this chapter.

Notwithstanding the two prominent peculiarities I have just instanced, it is nevertheless true, as a general rule, that amative excite-

ment and enjoyment of the act of coition in most women, render impregnation more certain; and, considering the prevalence of sluggish wombs, local adaptation is very desirable, and often indispensably necessary when children are wanted. Unless the womb be active, as the male organ relaxes from its distended dimensions, or is withdrawn after the expenditure of the semen, the folds of the vagina in closing together press out the seed of the male, and the childless wife at the close of each intercourse meets with the disappointment of finding the impregnating fluid upon her clothing, until by its continued frequency, she ceases to expect anything better, and despairingly gives up her fondest hope of becoming a mother.

The reader should carefully examine the annexed illustrations in the light of the foregoing explanations, and it will then be easily understood how a great many wives may be childless simply because of the failure of the male fluid to reach the mouth of a sluggish womb. In these illustrations of local inadaptation, I embrace displacements of

FIG. 308.



## LOCAL INADAPTATION.

*Note.*—With the greatest effort on the part of the author and engraver, it has been found difficult to present these illustrations in a way to avoid offence to those who are not individually or professionally interested. The course suggested in the *Note* on the opposite page has therefore been chosen, and they will be supplied to the barren or to physicians free of charge.

the uterus. These are common; more common than is generally supposed, for the reason that it is popularly believed that displacements do not exist in healthy women. It is generally thought that only those have displacements who are affected more or less with discomfort in the pelvic region. They are generally associated with such symptoms as leucorrhœa, dragging or bearing-down feelings in the region of the uterus, and various other symptoms described as occurring in these cases in the preceding chapter; but it should be understood that they are often produced in young girlhood so gradually, that Nature meekly conforms to the changed position of the womb. When brought about by any pressure of the bowels downward, the womb usually takes the position represented in the diagram marked I; or, when by contracting the cavity which it should occupy, the displacement represented by K. In far the greater number of apparently healthy cases I have examined,

however, the diagram designated by the letter I, best represents the displacement. It seems almost impossible that such a position should not in all cases affect the proper action of the bladder ; but it does not perceptibly in many, for I have discovered it in women who suffer no inconvenience whatever from an inability to retain the water, nor yet from any sensation of dragging, bearing down, or weight in the region of the womb. Besides the early effects of bad habits in dress, falls, severe jarring of the body, and diseases in girlhood cause displacements of various kinds, which, not remedied, in adult age continue without the usual painful symptoms. Nature, having become accustomed to the changed position, performs all her functions faithfully, excepting that important one—reproduction, and for the purpose of this, all that is necessary is to introduce the fecundating fluid of the male into the uterus, or bring it in direct contact with the mouth of the womb.

I trust the reader will bear patiently with me while I enter into an extended explanation of the diagrams. Let us look them over carefully together, for local inadaptation should be carefully studied by the childless. It is, as I have already said, not only the most common cause of unfruitfulness, but also one which is the most easily remedied without the aid of a skilful physician experienced in the treatment of sterility.

A, represents the womb in the right position, but the organ of the male is some seven or eight inches long, and, therefore, passes the mouth of the womb. Although the average length of the male organ is six inches, in many cases it is seven, and in some as long as eight or nine inches, while in a few, and I might say extraordinary ones, its length is greater than I have mentioned. Practically, this inadaptation amounts to the same as that represented in the next illustration. The mouth of the womb must be active, or the impregnating fluid of the male will pass out of the vaginal cavity without causing pregnancy.

B, represents the womb as being located too low in the vaginal cavity, so that the glans-penis of an organ of average length is imbedded in the loose bagging folds of the vagina above the mouth of the womb, and there, away from the entrance to the uterus, the seed of the male is deposited. As it falls outwardly, unless the mouth of the womb is very active, it passes this orifice and finds its way out of the vagina, not a drop being retained for fecundation. This position is not uncommon.

C, represents the reverse of A. Here the female organ is well formed, but the male organ is only three or four inches in length, and consequently barely passes the external and internal lips of the vagina, leaving a distance of two or three inches between the glans-penis and the mouth of the womb. Now, here we see quite a disparity, and es-

pecially so when it is borne in mind that if the penis be even one inch too short, and deficient in ejecting force, the impregnating fluid may fail to reach the womb unless the mouth of the latter has active absorbing power. The force with which the semen is ejected from the male, greatly varies in different persons, so that, if one having but little of this force and a short penis, is united to a female having the womb in the right place, but deficient in suction power, pregnancy will not be likely to take place, however fruitful the female may be in the production of healthy ova, or the male in secreting vital semen.

D, gives a view of quite a different position of things. Here the male organ possesses the average length, but the uterus is located too far up in the vaginal cavity. The vaginal canal is really quite too long. The distance from the outer surface of the external lips of the vagina to the mouth of the womb should not exceed five or six inches. Here the distance may be supposed to embrace eight inches, leaving a penis of six inches in length, two inches from the mouth of the womb; and one of three or four inches, as in C, hardly half way up the vaginal cavity. If a woman of this procreative organism be the wife of one having a short penis, all must depend upon extreme susceptibility to impregnation on the part of the former, for the ejaculatory force of the seminal expenditure could hardly be sufficient to reach the mouth of the womb, if the male organ is of the usual length, as represented in D. With two inches space between it and the uterus, deficiency of suction power on the part of the wife and of ejaculatory force on the part of the husband, intercourse would prove fruitless.

E, represents the womb in the true position; but there is a downward curvature of the male organ, so that it not only does not reach the mouth of the womb, but it pours the fecundating fluid upon the back wall of the vagina, from which position it may pass out without coming in contact with the mouth of the womb. I have known cases of married people who were liable to excessive child-bearing, in which the husband successfully resorted to this position in the vagina at the moment of the seminal expenditure, for the purpose of preventing conception. The only reason it may not be considered a reliable prevention is because of the great suction power of the uterus in many women; but in those I refer to it was a success, and they only bore children when they desired to.

F, represents another malformation of the penis. Here the organ has a side curvature, and points to one side of the walls of the vagina. The deposit of the seminal fluids in this place, at each intercourse, is sufficient in some cases to render the married pair childless.

G, represents the neck of the womb twisted so that it will not face the glans-penis in the sexual act. This malformation is not infrequently met with. I have examined many cases in which it was longer.

alim, and contracted, pointing, in some, to the side ; in others, upward or downward. In one case that I examined, the neck of the womb was two inches long, no larger than a good-sized goose-quill, and as pointed as a pencil. The suction power in such a womb is never more than moderate.

H, exhibits the glans-penis with a similar deformity. This one is twisted sideways. In some cases the glans is bent downward, and in others, upward. I have never yet in my practice met with a pair in which the wife had the malformation of G, and the husband that of H. If there are two such unfortunates, offspring cannot reasonably be looked for until my remarks on remedies are read, and the difficulty mechanically obviated. When one has such a deformity, it is enough to cause the absence of offspring. We will now turn to Fig. 208, and continue this investigation.

I, presents the top of the womb fallen forward, causing the mouth to rest against the back walls of the vagina. So imbedded is the neck of the uterus in the membrane lining the vaginal cavity in some cases of this kind, that no other than mechanical means can possibly rescue a female from barrenness. When it simply rests against the back wall, without pressure, the penis passes above it and pregnancy may be prevented from taking place.

J, represents the opposite position, the mouth of the womb pressing against the front wall, dividing the vagina from the bladder, in which case the penis passes under the mouth of the womb and to the side of it. When the womb occupies this position, or the one shown in I, its mouth is as completely covered as if the finger were placed over it. To these two positions may be attributed the most common causes of barrenness presented under the head of local inadaptation, although the inadaptations represented in A and B occur nearly as frequently.

K, presents a position not very dissimilar to that given in J. The difference is, that the uterus has fallen downward as well as backward. There are also downward and forward displacements, as when the womb occupies the low position represented in K, with its top against the bladder, and its mouth against the rectum. In these displacements the penis presses against one side of the womb, and in most cases is not allowed to enter far into the vagina. When, however, the male organ is short, this position of the womb occasions no inconvenience in coition. If the male organ is long, it does.

L, represents the uterus in its right place, and the penis also ; but the glans-penis is covered with the foreskin, which will not yield and press backward, but closely envelopes the glans, and projects beyond it. This is technically called phimosi, and unless the orifice of the foreskin is on a direct line with the glans, the seminal fluids may be misdirected, and their ejaculatory force impeded.



M, gives something of an idea of the position of the womb when it is doubled upon itself. In this diagram the engraver has not been entirely successful in presenting the doubled position of the neck, or the obliterated condition of the cavity. It is often much more doubled upon itself than the diagram represents. In a case of this kind, the male organ has no difficulty in coming in contact with the mouth of the uterus; but the canal leading up through the neck to the cavity of the womb is nearly or quite closed up by its cramped position. In this position the mouth usually has but little suction power, and sometimes none at all. When the suction power is sufficient, the compressed condition of the canal may obstruct the passage of the spermatozoa, and thus prevent the possibility of conception.

N, presents an irregular, contracted vagina, preventing the entrance of an ordinary-sized penis to a sufficient depth to meet the mouth of the womb. The womb itself is in a good position, and in its right place; but it is practically blockaded. While many of these contractions are congenital and incurable, some are produced by disease, and may be remedied. When congenital, the skilful knife of the surgeon may sometimes obviate the difficulty.

O, represents a similar inadaptation arising, not from contraction of the vagina, but from the unusual size of the male organ. When the diameter of the penis much exceeds two inches, it is apt to prove a troublesome member. I was recently consulted in a case where the circumference was seven inches, and the length eight inches, and the vagina of the wife had not yet been able to admit it. If the mouth of the womb is very active, this inadaptation may not prevent pregnancy; but if it is sluggish, some means recommended in the remarks on remedies should be adopted.

P, presents the womb in its proper position, and the glans-penis near its mouth, but the natural outlet of the urethra of the male has been closed by disease, considerably scarifying the glans, and the orifice through which the seminal fluids are discharged is over, or in more cases, underneath the glans-penis, and a little below it. In such a case, the glans may be so pressed against the mouth of the womb, as to absolutely obstruct the orifice when the seminal fluids are discharged in an upward or downward direction. In such a case the suction power of the uterus might be vigorous, and the end of the penis so block the passage into the uterus that pregnancy would not take place. If the mouth of the womb be inactive in such a case, conception would be almost, if not absolutely, impossible, excepting with the adoption of some means recommended for overcoming local inadaptation, given in another place.

Considering how blindly people come together in marriage, it is not at all surprising that local inadaptation often takes place. In just

what manner, consistent with the safety of our system of society, the liability to mistakes of this kind may be obviated is difficult for the physiologist to suggest. Even when a person selects a companion with the strictest view to a union founded upon affection only, the choice may prove a partial failure. A man may enter a clothing store and select a garment which exactly suits his idea in quality and style, but when it is sent home, if he has not tried it, he may find that it pinches in the arms ; draws too tight in the back ; or is too long, or too short-waisted. A young woman may select at the shoe store a pair of shoes which in her opinion will prove "just the thing," when, upon trying them on, they pinch the toes, or the instep, or in some other way fail to make the feet comfortable. So here is a question for physiologists and moralists to settle. How shall all liability to local inadaptation be avoided ?

Let me strongly urge upon all who are childless to sufficiently acquaint themselves with their organs of reproduction, and the position which they occupy in the act of copulation, to determine if possible for themselves, whether local inadaptation may not be the real cause of their barrenness. By carefully examining the names, locations, and descriptions of the organs as presented in "Private Words for Women," and as will be presented in "Private Words for Men," it seems to me all may be able to do so without any direct aid from the physician.

#### **Diseased Condition of the Wife.**

Falling of the womb is a very frequent cause of barrenness. I have already explained in what I have said regarding local inadaptation, how this affection may prevent pregnancy ; and I have here only to remark that while displacements very often exist without any signs of disease, the world is full of sufferers from painful displacements of the womb. When the painful symptoms are present, pregnancy is less liable to occur than when these symptoms are absent, because their presence shows that the womb is not only out of its natural position, but that it is congested, inflamed, and debilitated, and all of its appendages with it. The whole muscular structure of the procreative apparatus is relaxed, and every organ involved ; intercourse is more or less painful, the mouth of the womb is sluggish and often congested, and sometimes sensitive to pressure. Its orifice is nearly or quite closed up by inflammation ; or is open and so nearly paralyzed as to be unable to receive or retain the impregnating fluid. Impregnation may be effected in some cases by means which I shall advise where simply local inadaptation exists ; but in a majority of them, the womb is too much diseased to perform its most important function successfully. Even if impregnation is effected, an early miscarriage may

occur ; for, if the womb is inflamed and swollen, it will not expand to make room for the growing fœtus ; if relaxed, it does not possess sufficient strength or contractile power at its mouth to retain, for the natural period of gestation, its precious fruit.

In some cases, when the womb is really in its right position, and all the organs of generation are in a sound state, the cavity of the womb may be closed by inflammation. In others, the lining of the cavity may be so affected by inflammation that it will peel off, either in a body, or in strips or shreds, so that when conception does take place, if conception be possible, the infant fœtus, with its placenta, is carried away sooner or later, by this shedding of the lining of the womb's cavity. In some cases of this kind which have come under my observation, conception would take place and pregnancy continue to the second, third, and in some instances, to the fourth month, and then all would be detached and pass off in a shapeless mass, or else in fragments. Ulceration in the lining of the cavity may exist, and poison or destroy the life of the spermatozoa, and thus prevent conception.

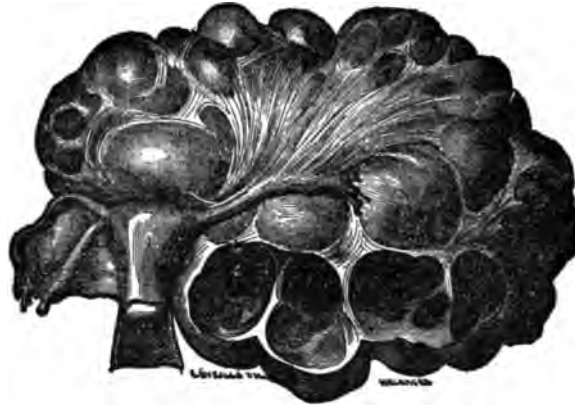
It is sometimes found that a body of coagulated mucus blocks up the canal leading from the mouth of the uterus to the cavity, so that the spermatozoa can neither pass through it, nor between it and the walls of the canal. It should be understood that there are glands in the uterus which secrete mucus for the purpose of lubricating the parts and facilitating the passage of the child in confinement. These glands are usually active in sexual intercourse, and somewhat so in menstruation ; but when this mucus possesses unnatural properties, especially glutinous, it may obstruct the passage as I have explained, and although the obstruction may be swept out by the menstrual blood each month, such may be the condition of the glands that another plug will almost instantly form, allowing no opportunity for the spermatozoa to ascend the canal. Chronic irritation or inflammation may cause a puffiness of the lining of the neck of the womb so as to effect the same result. Stricture of the neck of the womb may also prevent the spermatozoa from entering the cavity. Chronic irritation may not only exist in the lining of the neck, but also up through the cavity just sufficient to produce a high degree of sensitiveness, such as sometimes exists in the lining of the stomach. When this condition prevails, the presence of the seed of the male in the womb causes contractions either at the time it is received or not many days after, and it is thrown off just as food is thrown from the stomach by vomiting when this kind of irritation exists in the stomach.

Ovarian affections are often the cause of barrenness. It must be remembered that the ovaries in health are the organs which produce the ova or eggs of the female. They are to the female what the testicles are to the male. In them is produced the little germ which, united

with the male germ, forms the fœtus. Fœtus is a name given to the child in the first stages of its utero life.

The ovaries are subject to many affections which might be properly stated as inflammatory, ulcerous, cancerous, tumorous, dropsical, and paralytic. Fig. 209 represents an ovary affected with cysts, or sac-like bladders, filled with fluid (serum), which form the common kind of "dropsical ovarian tumor." Such a tumor, if small, may give very little inconvenience, but when large enough to press injuriously on neighboring organs—the intestines, rectum, bladder, and womb—there may be serious impairment of general health, and urgent necessity for relief. This may sometimes be afforded by tapping, to draw off the fluid, a very simple operation; but the radical operation for

FIG. 209.



DISEASED OVARY.

removing such a tumor is called ovariectomy, and though it requires opening into the abdominal cavity, the mortality has been reduced from fifty to seventy, to five or ten per cent. by the improvements in modern surgery. When barrenness is caused by this condition, of course the only hope of relieving barrenness lies in *medical* treatment. Removal of the ovaries by surgery renders parentage impossible to the one who is compelled to resort to it; that is to say, if both ovaries have been involved and both removed.

Ovarian affections, unless of a paralytic character, are attended with more or less pain in either side of the abdomen in the regions where the ovaries are located. Often distention and tenderness are experienced in these regions when inflammation is present. In the paralyzed state of the ovaries there is an entire want of action, and



seldom any feeling of pain, soreness, or other symptoms to indicate the existence of the trouble, excepting barrenness. Every organ of the body requires the nervous or electrical stimulus to properly perform its function. The stomach will not digest food if the pneumogastric nerve conducting the nervous or electrical stimulus to that organ is severed; and when the nerves leading to the stomach are inactive, digestion becomes at least defective. Now, the ovaries require the same stimulus, and unless they have it, either no eggs at all are ripened, or any which may be generated are not sufficiently perfect to render impregnation possible. The thoroughly paralyzed ovary much resembles that of a female who has passed the age for child-bearing, as represented in Fig. 211. Partial paralysis of the ovaries may not at all interfere with the general health; and a person having these organs so affected may appear to be in the full enjoyment of health, not only to their neighbors, but to themselves; but child-bearing is impossible unless they are restored.

Affections of the ovaries are in most cases attended with more or less disturbance of the menstrual function. When the ovaries are nearly or quite paralyzed, the menses are too slight. When inflammatory, ulcerous, or tumorous affections are present, the menses are too profuse; and sometimes fleshy substances or fibres pass with the menstrual discharges. When the ovaries are dropsical, the menstrual fluids are often found to be very watery, with a lightish appearance or yellowish color. Tumorous and dropsical ovaries in some cases produce very great abnormal distention, so that the female is supposed to be pregnant by those not capable of judging. It is well in these affections that females so suffering are not liable to pregnancy, for they could hardly survive the period of gestation. Nor is it best that women should become pregnant until these difficulties are entirely eradicated, for pregnancy is possible when only a partial cure is effected. Both out of regard for the health of the offspring, and the greater safety of the mother, every vestige of tumor, or dropsy, should be removed before conception is allowed to take place.

Diseased secretions of the vagina and womb frequently occasion barrenness. The most common difficulty which may be mentioned under this head is leucorrhœa. I have spoken in a preceding chapter of the prevalence of this disease. In health there is only just sufficient

FIG. 210.



THE OVARY IN HEALTH.

mucus secreted in the vagina to produce an agreeable moisture without any discharge whatever. It has been discovered that the spermatozoa of the male will live for many days in the healthy secretions of the vagina, whereas their contact with the diseased secretions seems to prove almost immediate death to them. Some of these abnormal secretions simply lack a sufficiency of the natural properties belonging to them; others possess purulent and acrimonious properties, attended with more or less irritation or burning heat in the parts. It is not infrequently found that unwholesome discharges proceed from ulcers in the vagina, or in the womb. Whatever may be the source or immediate cause of the discharges, it may be safely said that any departure from the natural properties of the healthy vaginal secretions may occasion barrenness. Some childless wife will observe that she has these discharges just before and just after the menses, the very times when she would be most likely otherwise to conceive. Some women

FIG. 211.



THE OVARY IN OLD AGE.

can only conceive within two or three days before, or within ten or fourteen days after menstruation. Suppose, in a case of this kind, leucorrhœa sets in just previous to the menses, and reappears at the cessation of the menses, and continues for about a couple of weeks; if that leucorrhœa possesses acrimonious properties, there is hardly a shadow of a chance for a person thus affected to become pregnant. It is true that some women habitually affected with leucorrhœa raise large families. In these cases, either the secretions are not acrimonious or poisonous, or local adaptation is so complete that the spermatozoa enter the mouth of the womb at the moment they are discharged from the male organ so as not to come in contact at all with the fluids of the vagina.

The Fallopian tubes, through which the ova descend to the cavity of the womb, are sometimes obstructed by inflammation, ulceration, gluey secretions, or strictures. Any one of these conditions of the ovarian tubes may exist without any perceptible effect upon the general health.

In persons of a scrofulous diathesis, the blood may be so greatly diseased that the productions of the ovaries lack vitality. This want of vitality may be sufficient to prevent conception altogether; or it may be sufficient to allow impregnation to take place, but not sufficient to withstand and prevent the menstrual flow; and, in some cases, it may even allow pregnancy to go on for a few months, but before the child can be fully developed, the fœtus dies and a miscarriage occurs. In



those who are born there are all degrees of vital tenacity exhibited. Some perish in infancy, some in early childhood, some in youthhood, some in middle age, while a few live to ripe old age. Well, now, there are all degrees of vital tenacity in those ova inhabiting the wombs of pregnant women, and the vital tenacity of each fœtus depends upon the health of the parents, temperamental adaptation, and upon the circumstances under which conception has taken place.

An excess of flesh may occasion barrenness. Fatty matter may not only so envelop the ovaries as to interfere more or less with their functions, but it may so separate the ovaries from the fimbria, or extremities of the Fallopian tubes, as to prevent the egg from descending to the cavity of the uterus. In some cases, excessive flesh may so widen or distend the body in the region of these organs as to render the Fallopian tubes too short to reach the ovaries. Anyone can easily picture to herself how the distention of the body between the hips may remove those little ovarian organs sufficiently far away from the extreme ends of the Fallopian tubes as to completely isolate them. When this state of things exists, the ova or eggs as they ripen, simply drop into the cavity of the abdomen, where they doubtless are removed by absorption, while the womb, vagina, and the whole procreative system appear to be in perfect health.

Impotency on the part of the wife may cause barrenness. This disease may exist in the erectile muscle and tissue of the female, as well as in those of the male, in which case there is too much of a flabbiness and relaxation of the procreative system to either take up the spermatozoa of the male, or to retain for impregnation the ovum of the female. In such cases, frequently there are no other symptoms except inability to enjoy the sexual act.

Tumors in the vagina, the rectum, the bladder, the neck of the womb, the ovaries, or the Fallopian tubes, may be so located as to prevent the male germ from effecting a meeting with the ovum of the female. The presence of these tumors may always be detected either by external or internal examination.

#### MORE INTERESTING FACTS ABOUT THE OVARIES.

Inasmuch as the reader was referred in "Private Words to Women" to this chapter for information respecting these important organs, I shall have more to say about them here than is quite germane to "Hints to the Childless," but the matter will be found exceedingly interesting, and especially so to those looking into the causes of barrenness. In almost all cases of tumors about the generative organs, especially if in the ovaries, the question is likely to arise as to the advisability of operation. Many such operations must of course be followed by hopeless sterility; but this will not be an item to consider if the

condition already existing is really an incurable case of sterility. Then the woman becomes no more sterile after operation than before, and the advisability of it will depend entirely on what it may be expected to accomplish in the way of actually improving the state of health and the comfort of the patient. This is generally a very debatable question, and often difficult to decide, as must have been already observed in what has been said on the subject. Some cases would surely be somewhat benefited by removal of very diseased ovaries or tubes, and in others operation merely substitutes a new set of troublesome symptoms for the old ones. The results of complete removal of the ovaries cannot in any case be fully foreseen nor predicted by the wisest of the profession, and this is so because they are so dependent upon the idiosyncrasy of the patient; but the probable results are those summed up by Dr. Christopher Martin.

1. The woman becomes absolutely sterile.
2. Menstruation ceases in about ninety-five per cent. of the cases.
3. The uterus, and to a less extent, the vagina and vulva undergo a process of atrophy.
4. The nervous symptoms of the menopause appear abruptly and violently—viz., heats and flushes, perspirations, palpitations, giddiness, depression of spirits, and a generally unstable condition of the nervous system.
5. In a considerable majority of cases there is a diminution or total abolition of the sexual instincts.
6. The patient has a tendency to obesity.

A very curious case was reported in one of our medical journals showing, that aside from the reproductive function, the ovarian action seems to exert some systematic effect which a woman cannot well afford to do without. The *Medical News* of April 29, 1899, had a report by Dr. Gloss of an operation for transplantation of the ovary. A housemaid, thirty-nine years of age, had been relieved of both ovaries by previous operation, and the artificially induced cessation of menstruation was attended with such depressing nervous symptoms that it was deemed best to give her back an ovary. The operator fortunately found another woman who ought to be made sterile, and who could spare an ovary. Only one was removed from her, and she was rendered sterile as to the other left in place by stricturing the adjoining Fallopian tube. The freshly removed ovary from woman No. 2 was introduced into the peritoneal cavity back of the womb of woman No. 1, by a small incision through the roof of the vagina, and, in due time, the symptoms complained of disappeared; menstruation was resumed, and sexual appetite returned as well. Were this not reported in journals of high standing, and seemingly credited by their editors, I should not relate the case here, for it reads not a little like a "fairy story," and yet has nothing positively incredible about it. Therefore, it is supposed that either the ovary abstracts something from the blood, or contributes

something to it, in a way that makes at least one, or part of one, a handy thing to have about a person of the feminine gender.

ARE THE OVARIES ESSENTIAL  
FOR THE MAINTENANCE OF SEXUAL DESIRE ?

As to the need of the ovaries for preserving something of the normal sexual desires, there is considerable very positive testimony that they are not essential. That operative removal of the ovaries is often followed by sexual apathy is certainly true, as proved by numerous reported cases ; and the late Dr. Lawson Tait, whose experience in such operations was perhaps unequalled, gave the results of his observation in one of his last articles contributed to the medical press (see N. Y. *Medical Record*, April 8, 1899). Dr. Tait was a man of very positive opinions, as indicated by this quotation from his pen : " We are told once more, though the contrary has been proved over and over again, that in a considerable majority of cases there is a diminution or total abolition of the sexual instincts. This is not true ; in fact, it is absolutely untrue. It is a subject on which, of course, the publication of facts is extremely difficult, either one way or the other. But my own facts establish the conclusion that the cases of abolition are extremely few, not more than five per cent. ; but they get greatly talked about by loose-minded women and by men whose sense of honor and proper reticence in matters concerning their wives is strangely defective. On the other hand, the instances of restitution of marital relations which had been entirely destroyed by disease and restored by the operation required are at least sixty per cent. of all the cases. In a few instances the mysterious fact remains that women who before operation had little or no sexual appetite had it developed after treatment to an extent which became inconvenient. I removed the appendages, twelve years ago, of a lady noted in public estimation to the highest degree. She had had one child, and to her husband had never shown any sexual response whatever till after the operation ; it became oppressive to him and he died. She lived as a widow for three years, applying to me from time to time for arrest of this symptom, until it got so bad that I advised removal of the uterus, and this I carried out not only without benefit but rather with a further increase of the trouble. She greatly objected to the idea of a second marriage, and had always resisted my advice and the advice of her parents in that direction ; but at last, and entirely to save her conscience from the reproach of wrong, she married again, and a few months ago the fact was announced in every paper in Europe. It is, therefore, perfectly useless to say that in a few cases the sexual tastes are destroyed. \* \* \* The whole thing is based on a misconception of the function of the ovaries, which have no more to do with the sexual

appetite than the kidneys. Nor have the Fallopian tubes nor the uterus, as it is maintained. On the contrary, it is sometimes increased by the complete absence of all five. The two most erotic women I have ever come across were two sisters in whom not the slightest trace of uterus or ovaries could be determined, and in one of them I had positive knowledge of the fact of their complete absence when I operated upon her for tuberculous peritonitis. They were in good social position, were not insane, yet no kind of inducement, social, parental, or restrictive, could prevail upon these women to refrain from inducing every man with whom they could get an opportunity to have intercourse with them, and they were confirmed Sapphists as well as the daughters of a well-known physician."

Physically, the women last described were almost sexual neuters, and certainly they were rare specimens to be so highly endowed with the desire for use of parts so deficient. I had one somewhat similar case, only a little more a-sexual, being without trace of a vagina. She was anxious to marry, and one of my assistants succeeded in developing by gradual operations a very passable vagina, but we did not know where to borrow other parts for transplantation. Nevertheless, she was married, her suitor being content without prospect of further family, but whether, as the fiction often puts it, they were "forever after happy," my record of the case fails to state.

Congenital neuters are not uncommon, but there are far more congenital psychic, than congenital physical, neuters. Naturally we should expect those devoid of sexual parts to be also without sexual appetite, and no doubt most of them are so; but on the other hand, there are numerous women who have all the parts and no normal desires, and of these psychic neuters some are sterile, and some are not, and some, if married, do develop that in which they seemed deficient.

#### **Diseased Condition of the Husband.**

It seems seldom to be mistrusted that the husband is at fault in an unfruitful marriage. Besides the evidences revealed by the microscope, childless widowers have been known to marry the second or third time, and still died without ever having become fathers; while one of their wives, and possibly each of them, has been the mother of children by a former or subsequent husband. I believe all medical works use the word barrenness only in speaking of women who are incapable of reproduction, but this same term may be properly applied in reference to a husband who is unable to impart to the wife a healthy germ. The husband may be to all external appearances in a perfectly healthy condition. He may be capable of enjoying the sexual act to the fullest



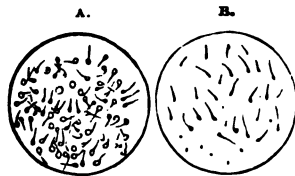
extent, and still be incapable of becoming a father. A wife is not infrequently blamed by the husband and friends for not becoming a mother when she is not at all at fault. All that she requires for becoming a parent is the introduction of a healthy spermatozoon into the vagina where it may come in contact with the mouth of the womb. There are a few congenital neuters among men, in whom the generative organs have not fully developed, and such men, even if disposed to marry, could not reproduce their kind. This is, no doubt, one reason why there are no more of them, for they almost always are devoid of attraction for women, and so remain single, as they ought. A physician of one of our New York hospitals, describing four of them, however, says they are retiring and "lady-like" in behavior! Post-mortem examination of one of them discovered only rudimentary testes no larger than a pea, and no prostate gland. Even men with well developed testes might be sterile, if the prostate gland were undeveloped, or seriously diseased, for the sperm-cells in the testicular fluid are inert or motionless, and no doubt of no account until vivified by contact with normal secretions of the prostate gland, with which they are usually mixed in a seminal discharge. This has been demonstrated by Fürbringer, and indorsed by others. Congenital deficiency of testes and prostate are rare, but the diseases which so interfere with their functions as to make a man sterile are only too common results of abuse and contagion.

The most common cause of barrenness on the part of the male is debility of his procreative organs, and especially of the testicular glands, causing the production of non-vital semen. In Fig. 212, A represents a microscopical view of living and healthy spermatozoa; while B represents a similar view of sickly and inanimate spermatozoa, such as are often found in the seminal fluids of a barren man. Masturbation in boyhood, or excessive venery in boyhood or manhood, may so weaken the testicular glands as to cause this difficulty in the male. Mumps settling in the testicles may produce a similar result, while severe sickness of any kind may in some cases so affect the testicular glands as to vitiate their natural secretions. Mercurial salivation may so affect the testicular glands as to render the spermatozoa sickly, so that if they are capable of impregnating the ova, a diseased embryo is produced which will not tarry long in the uterus. When the system is affected with constitutional syphilis, the male germ may not be sufficiently healthy to produce a vigorous embryo. In some cases the syphilitic impurity will so far affect the spermatozoa as to render them incapable of impregnating the ova. It should be understood that the germ of the male as well as that of the female, may be affected by disease. The extent of that disease may widely vary in the spermatozoa of different men; and it may greatly vary in any one person at differ-

ent times. In other words, a man who is usually sickly, or locally affected with disease, may have days or hours of convalescence when the spermatozoa generated at this particular time may possess all the vigor necessary for a successful impregnation, and the production of a healthy child. On the other hand, a man in perfect health in all his parts may have occasional seasons of debility in the procreative system, at which times the spermatozoa produced would either be incapable of impregnating a female, or of producing a healthy fœtus if impregnation did take place.

Destitution of the spermatic fluids may render a man barren. Occasionally cases are met with in which the male is fully capable of coition, and even the enjoyment of the act, when no seminal fluids are

FIG. 212.



THE SPERMATOZOA.

- A. Microscopic view of healthy spermatozoa.  
 B. Microscopic view of sickly inanimate spermatozoa found in the seminal fluids of a barren man.

emitted. In these rare cases, either the testicular glands, and the prostate and Cowper's glands are literally dried up, or there is some obstruction to prevent their secretions from reaching the mouth of the urethra. In some cases there will be an emission of fluids from the prostate and Cowper's glands and, to the non-professional eye, these fluids may have all the appearance of natural semen, when they do not possess the least particle of the germinal fluid from the testes. In these cases, the prostate and Cowper's glands are active, while the testicular glands are inactive,

or are prevented in some way from communicating with the seminal vessels. By referring to the chapter entitled "Private Words for Men," the complexity of the procreative machinery of the male will be observed; and it will be seen how easily those small tubes called the *vasa deferentia*, which convey the secretions of the testicles by a circuitous route to the seminal vessels may be in some way obstructed. Their natural orifice is only sufficiently large to admit of a bristle, so that any affection of these tubes might easily shut off the contributions from the testicular glands, which contributions possess all that is actually vital in the semen.

A stricture of the urethra, as I have before remarked, may prevent the seminal fluids from passing it at the time of intercourse. In this case the semen passes back into the bladder, and escapes with the urine when that is voided. This may reasonably be expected, even in slight cases of stricture, in which the person has but little trouble in expelling the urine, because the act of voiding the water usually takes place when the penis is in repose, and not erected, and when elastic



and flabby, the urine may pass quite easily, carrying with it the spermatic fluids which may have been emptied into the bladder, while the spermatic fluids could not pass in a state of erection because of the congested condition of the organ, and the consequent contraction of the canal of the urethra. Stricture cannot very well exist without the knowledge of the person so affected. If it does not so far obstruct the passage of the water in urinating, as to give some inconvenience, the stream flowing from it is divided as it leaves the orifice, or in some cases it may present a spiral motion as it flows out. As the symptoms attending stricture, as well as other remarks upon this disease are presented in a previous chapter, it is unnecessary to dwell upon this difficulty here.

Chronic gonorrhœa or gleet may render a man barren ; for if the spermatozoa are produced in perfect health in the testicles, their vitality will be affected or destroyed, as they pass through the urethra, by the acrimonious secretions of that canal.

Like leucorrhœa in the female, gleet or gonorrhœa is destructive of the spermatozoa. No one affected with this disease need be unconscious of its presence. There is, either at intervals or constantly, a passing out of diseased mucus ; or, if it does not run or drizzle away, it may be pressed out of the orifice of the urethra.

Catarrh of the bladder, or of the urethra, may destroy the vitality of the seminal fluids and thereby render the male barren. In fact, any unwholesome secretions of the urethra or bladder, or any ulcerous matter habitually descending the canal of the urethra, may be sufficient to kill the seminal animalcule so as to render the husband incapable of effecting conception. As in gonorrhœa or gleet, these difficulties are attended with discharges from the urethra, so that no one can be unconscious of their existence.

The reader has, in the foregoing paragraphs, the most common causes of barrenness in the male. Those difficulties proceeding from malformations of the penis have already been referred to in the essay on Local Inadaptation.

#### **Excessive Amativeness.**

This, on the part of either husband or wife, may be the cause of barrenness. If on the part of the former, he may be so excessive in intercourse as to hardly allow the spermatozoa to become sufficiently developed for impregnation ; or he may be so violent in coition that at the very moment when the womb should be under the influence of its absorbing movements, it shrinks away and recoils from contact with the male organ. In the latter case, the wife may or may not enjoy the act of coition ; but if she does, the womb at the climax involuntarily shrinks from the violent contusion which it is receiving.

When excessive excitability exists in the wife, the ova are sometimes actually ruptured by the violent contractions of the Fallopian tubes, or paralyzed by the excess of nervous force or electricity present. The womb may also, under such excitability, be set into violent contortions and contractions sufficient not only to expel the ova outright, but to prevent the spermatozoa of the male from entering. In some

FIG. 213.



TEMPERAMENTAL INADAPTATION.

A and B are supposed to represent one married pair, and C and D another married couple. The first two have light hair and eyes, and the second have black hair and eyes.

cases of this kind there is no doubt that the ova are absolutely ejected from the womb with as much force as the spermatoc fluids are ejected from the urethra, whereas the ova ought to be retained in the cavity of the uterus. However forcibly the ova may be taken from the ovarian glands and carried down through the Fallopian tubes, they should not pass beyond the cavity of the womb, for conception never takes place in the vagina. In some cases where the procreative organs are exces-

sively sluggish in their action, pregnancy has taken place in one of the Fallopian tubes, much to the distress of the patient ; but no one who is at all informed in regard to the organs of the female, need be assured that an ovum precipitated into the vagina could not become impreg-

FIG. 214.



TEMPERAMENTAL INADAPTATION.

E is the husband of F, and G husband of H. The first pair have hazel eyes and dark brown hair, and the second light hair and eyes.

nated and developed there. Excessive amative excitability is, therefore, more apt to cause barrenness than is sexual apathy.

### Temperamental Inadaptation.

In my classification of the causes of barrenness, temperamental inadaptation came last. If I were treating upon ill-success in raising a family of children from conception to adult age, this cause would have been assigned the first place. What is temperamental inadaptation ?

The subject of this essay is a most important one, and should command the attention of every individual, whether married or contemplating marriage. As the temperaments will be thoroughly treated of in Part IV., I will not in this place enter into a physiological or nosological explanation of them. In this chapter it is simply my aim to awaken inquiry on the part of childless readers. May not your unfruitfulness arise from temperamental inadaptation? If you cannot decide the question by the general hints herein presented, then turn to Part IV., and make yourselves more familiar with the temperaments, and then, if you are still in doubt, present yourselves to the author in person or by letter.

#### **How to Promote Childbearing.**

In all cases of barrenness, the husband and wife should first make themselves sufficiently acquainted with their procreative organs and the various kinds of local inadaptation represented in the illustrations, Figs. 207 and 208, to determine if local inadaptation may not be the probable cause. If examination and observation lead to this supposition proceed at once to overcome the difficulty by such hints as I shall immediately present. First, let it be remembered that usually the most susceptible period for a woman to become pregnant is immediately after the cessation of the menstrual flow. This susceptibility continues for about ten days, when, in women not easily impregnated, it completely subsides. During this period of susceptibility, intercourse may take place two or three times with such aids to conception, as follows:

If the inadaptation be such as is represented by either A or B in Fig. 207 make a circular cushion as large as the hand, stuffing it with hair or cotton. Then make an orifice through its centre large enough for the male organ to pass through. The thickness of the cushion should be just sufficient to bring the end of the penis, in intercourse, in juxtaposition, or face to face with the mouth of the womb. Use this cushion whenever connection takes place for at least one year, unless the object is sooner attained, for a woman who does not readily conceive may not have more than one or two susceptible periods throughout the whole three hundred and sixty-five days.

If the inadaptation be such as illustrated in C and D, Fig. 207, in some cases a bandage fastened tightly around the body of the female, over the region of the abdomen, during connection, will press the womb downward sufficiently to bring the mouth of that organ in contact with that of the male. The posterior of the female body should also be elevated by a pillow for obvious reasons. Observance of these directions failing after six or eight months' trial, the wife may, in addition thereto, draw in her breath as fully as possible and with it press

downward at the moment the male fluids are being received. This alternative should only be resorted to after failure of the first, because this downward pressure of the breath in some women having a relaxed uterus, prevents the seminal fluids from entering the mouth of the womb, but there are cases in which this kind of effort favors conception. If all these plans prove fruitless after one year's trial then resort should be had to the "French Pessary" (see page 609). This instrument should also be used in cases of malformation, such as those represented by E, F and H, while in such a difficulty as that illustrated by G, the use of the impregnating syringe will prove most available (see page 1227).

If the inadaptation be such as illustrated by I, in Fig. 208, the bladder should not be voided for several hours before, nor until at least thirty minutes after connection. If connection be painful with the bladder thus distended, make a pad of hair or cotton as large and thick as the hand, and another one of the size and shape of half an orange. Attach the flat surface of the latter to one of the flat surfaces of the large cushion right in the centre. Then void the urine before intercourse, and place the conical surface of this cushion over the region of the bladder, or, in other words, a little above the bone at the top of the entrance to the vagina. Fasten it to this place by straps or strings passing round the body. This will produce a pressure against the bladder, and the bladder will press against the upper part of the womb and cause the same to assume a more favorable position. To facilitate this object nearly or quite the whole weight of the male body should rest upon that of the female at the moment of the seminal discharge. If this plan fails, in addition to the application of the pad over the region of the bladder, take the precaution before coition to place a piece of moist velvet sponge under the neck of the womb so as to bring it forward, but press the sponge sufficiently back to prevent it getting out of place. It would also be necessary to make use of the cushion directed for A and B if the male organ passes beyond the mouth of the womb.

If the inadaptation is such as is represented in either J or K, conception would be more liable to take place when a desire is felt for a movement of the bowels, as the pressure of the fæces in the rectum tends to press the upper part of the womb into its proper position, and thereby brings the mouth of the womb away from the front wall of the vagina. If this rule be observed, the fæces should still further be retained for upward of forty minutes after connection, as immediate straining might expel the male germ from the feeble uterus; and it is proper to add, that violent straining at stool within twelve hours after might defeat conception. If the distention of the rectum by the plan prescribed does not sufficiently liberate the mouth of the womb from the front walls of the vagina, insert a piece of moist velvet sponge between

the neck of the womb and walls of the vagina, taking care to press the sponge far enough above the mouth of the womb to prevent it from falling out of place. If conception fails after observing the foregoing suggestions for four or five months, it would be advisable, in addition to adhering to the same rules, for the female to make a practice of reclining on her face more or less every night, and for twenty or thirty minutes before connection, and even during connection, if necessary, as this position still further aids in restoring the womb to its right place when the upper and heavier part rests against the back walls of the vagina. In this kind of displacement it may be necessary also to observe the directions given for A and B, if the male organ be long or the womb low down in the vaginal cavity.

If inadaptation proceeds from phimosis, as shown in L, the male should be circumcised if the foreskin be very redundant; or, if constricted only, the part can be expanded, and the phimosis cured, by using an instrument which I devised for that purpose (see advertisement on page 1227). The use of this instrument will usually prove effective even when the prepuce is too long, for then it can pass back over the glans-penis.

When the neck of the womb doubles upon itself as (rather imperfectly) represented by M, medical treatment should be resorted to for the purpose of giving it its natural shape. The skilful physician can usually remedy the trouble, but if he fails, recourse may be had to the impregnating syringe recommended for G.

N presents a condition of the vagina that might render childbirth unsafe, if conception were possible. Consequently, the opinion of a physician should be sought as to the expediency of adopting means that would favor conception. In most cases of this kind the use of the impregnating syringe recommended for G, causes pregnancy to take place; but might it not be hazardous to the wife to encounter the possible perils of parturition? If the congenital or acquired malformation of the vagina can be removed by the surgeon's knife, then conception might take place naturally; but, again, if the surgical operation should materially lessen the elasticity of the vagina, it might not be possible for the living child to pass the inelastic cavity. While some of these cases may be helped out of barrenness without unusual hazard, it would be well for persons who are unfruitful through this cause to obtain the opinion of some experienced medical man.

When inadaptations like those illustrated by O and P in Fig. 208 exist it is often necessary to resort to the use of the French Pessary spoken of on page 609. Sometimes, however, in cases like P, barrenness may be overcome by arranging the cushion as directed for A and B, of just sufficient thickness to prevent the end of the male organ from pressing or even touching the mouth of the uterus. This precaution



will at least prevent the mouth of the womb from becoming blockaded. When other means fail, an operation may usually be safely performed for the restoration of the mouth of the male urethra to its natural place.

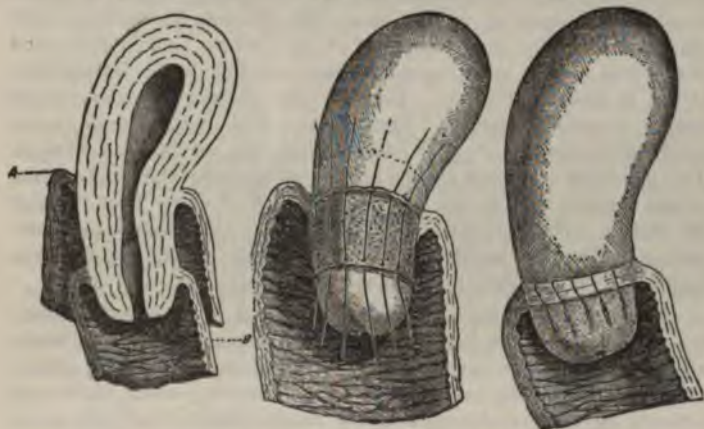
#### IMPORTANCE OF OVERCOMING LOCAL INADAPTATION.

Before leaving this subject of local inadaptation, I wish to add that although it has been generally overlooked or neglected by the so-called authorities and text-books, I am not alone in regarding it as exceedingly

FIG. 215.

FIG. 216.

FIG. 217.



#### DR. PALLÉN'S OPERATION FOR ELONGATED CERVIX.

Fig. 215.—A. Abnormal implantation of the vagina producing intra-vaginal elongation of the cervix. B. Normal vaginal implantation. This figure is given as illustrative of the mechanism of the lesion under consideration by comparison of the two conditions. Fig. 216.—Showing the line of separation above the stripped cervical mucous membrane, and the position of the silver sutures before the sliding is perfected. Fig. 217.—Showing the adjustment of the flaps, and the appearance of the neck after vagino-cervioplasty.

important and worthy of all the consideration I have given it, while on the other hand, the lack of attention by other writers and specialists is one of the most glaring and remarkable deficiencies of medical literature. What I have presented in the foregoing pages was certainly original with myself and was discovered as far back as 1865 or earlier, but was first given to the public in this work in 1869. If any previous writer can be quoted as being in advance of me, it has not been my good fortune to happen upon his work. Ten years subsequent to the appearance of this matter in this volume, Professor Montrose A. Pallen, A.M., M.D., Professor of Gynecology in the University of

the City of New York, since deceased, delivered a lecture which was reported in the *Medical Record*, August 30, 1879, on a special operation which he had found useful in remodelling the relation of the womb and vagina where Nature had failed to make up a woman just right. He spoke of many faults of those organs originating from lack of normal development, but the special deformity which he had operated to correct, was that of an over-long cervix; and this he did by making a new place of attachment for the vagina, lower down upon the womb. He then reported five successive cases, and explained why the method was far preferable to that of cutting off the seeming surplus of cervix as others had done up to that time. Dr. Pallen's illustrations show where he found the vagina attached (A) and where he left it (B), and how it was done by aid of many stitches (see Fig. 216). Its position, at last, is shown in Fig. 217. He said "The patient presented herself simply because of sterility. She had no aches or pains save during marital congress. \* \* \* Her sterility was certainly mechanical. This operation was made for the purpose of allowing the implantation of the seminal fluid in the proper place. \* \* \* Then," added Dr. Pallen, "*the correction of defective physical relationships, and overcoming of sterility is worthy the profoundest study.*" This remark from high authority sustains all I have said upon the subject.

While not denying the utility of various operations for reconstructing faulty parts, it has been my aim, as this essay from beginning to end shows, to devise other means of accomplishing the object, for if conception can once occur, and child-bearing result, there may follow a sufficient re-development or re-adjustment, and subsequent pregnancies will occur without resort to special methods. While inditing this paragraph I recollect a very peculiar case of elongation of the cervix or neck of the womb once coming under my treatment, and the extraordinary feature of it was its smallness and its corkscrew shape. It was as spiral as the caudal extremity of a young pig is sometimes observed to be. Furthermore, its extremity tapered to a point. Such a case naturally suggested the necessity for surgery, but even to my own happy surprise I brought it to a normal shape and length by local and constitutional medication without recourse to surgery. This story may appear as incredible as the one about the transplantation of the ovary, but it is true, nevertheless, and serves to show that medicine can often accomplish what one would suppose could only be remedied by the instruments and deft fingers of a surgeon, or some of the devices I have suggested. Many years ago, as I remember it shortly after the publication of the first edition of this book in 1869, I received thankful acknowledgment from an English physician because he had through the suggestions of this chapter been able to solve the hitherto puzzling problem of sterility covering a period of seven years in his own domestic

life, and this is but one instance of hundreds of "Plain Home Talk" readers who have been thus aided to overcome barrenness without surgical operation; but if surgery, either for the husband or wife, be really necessary, it only remains for him or her to say whether the end justifies the means.

In its issue of January 21, 1888, the New York *Medical Record* presented some valuable hints for overcoming sterility in cases of ante- and retro-version of the womb, which were credited to Professor Pajot, a noted French physician; but they were so like the advice long ago offered in this book as to make me wonder if Professor Pajot had not been an attentive reader of it. The hints presented by Dr. Pajot were in words, and even sentences, so much like what I had printed in this volume in 1860, that it certainly looked as if he had derived his information from the pages of one of the early editions. Many thousands of copies had been sold in both the English and German languages, and he might easily have had access to this very matter as it originally appeared in "Plain Home Talk and Medical Common Sense," or in the German translation entitled "Offene Volkssprache." However, if they were thought out by himself, it is one more evidence that this long-neglected subject is coming to receive the attention it deserves, and some day the medical text-books and colleges will present what my readers have known for over thirty years, and, furthermore, have used for their practical advantage, while the majority of the profession are still ignorant of it.

#### MORE VALUABLE HINTS FOR OVERCOMING BARRENNESS.

Besides the various suggestions I have heretofore given in cases of physical inadaptation, and operations possible for mending matters, there are other resources which are well worthy of mention here, and they can be utilized when barrenness is due to uterine inactivity or vaginal spasm, or to contracted neck of the womb, or, indeed, for several of the difficulties indicated by the illustrations of Local Inadaptation, Figs. 213 and 214. In many cases the seminal fluid, after being deposited appropriately where it should be, is too quickly exuded by contractive muscular action of the vagina; but it stands to reason that if the impregnating fluid could be held for many hours close up against the mouth of the womb the chances of conception must be greatly increased. It is possible to effect this by using a rubber cup or cap pessary, a ring with a diaphragm, all of rubber, usually sold by the druggists under the name of "French Pessary," although it was, in fact, an American invention, which was devised by myself and an associate physician in my office as long ago as 1859, and first made for my use in practice. It is not large and hard enough to exert the harmful pressure to which I objected in speaking of vaginal womb-supporting

pessaries. Besides which, like rubber shoes, it is used only occasionally, not constantly. It should be introduced immediately after the fluid has been deposited in the vagina, in a way to catch up and carry it to the mouth of the womb, where it may be left in place for even twenty-four hours. Its introduction and removal can be easily learned by any woman, and the circulars that go with the pessaries are generally explicit enough. They may also be serviceable for application of medicaments to the mouth of the womb if retained in place for a short time only. In using this article for barrenness I would suggest that no medicated ointment or carbolated vaseline be used upon it. It may be simply immersed in tepid water before its introduction. If a year's trial of this promoter of conception fails to cause it, then there is one more possible resource in the impregnating syringe whereby the seminal fluid may be injected into the womb itself, and this idea may be fairly credited to some French physician. It is the last resort in mechanical means, and if it fails after a few trials one may conclude that there is some uterine, ovarian, or Fallopian tube obstacle to conception, or that the married pair are not temperamentally matched for parenthood. I and my two sons have advised the use of both the so-called French Pessary and the impregnating syringe in quite a number of cases with great success.

#### WHEN DISEASE IS THE CAUSE OF STERILITY.

It is always best to consult a physician who has given attention to this branch of physiology and medicine. When possible, medical counsel should be sought by personal application; when impossible or inconvenient, correspondence will be necessary. In the latter case, answers to the questions on page 761 will usually enable the author to determine as to which of the parties is barren, and the cause of the barrenness. In some obscure cases it is necessary to examine the seminal fluids under the microscope before a satisfactory diagnosis can be determined. This may be done by personal application of the husband, or by correspondence. The annexed cut, Fig. 218, represents the instrument with which the author conducts such investigation, and, it may be added here, with pardonable pride, that it was the college prize which Dr. E. B. Foote, Jr., won when he graduated from the New York College of Physicians and Surgeons in 1876. It is a powerful one, and so magnifies objects that the spermatozoa of the male when placed under its lenses look about as large as those larvæ in rain-water from which the mosquitoes finally emerge. A particle of healthy human semen no larger than a pin's head presents under the lens of this microscope hundreds of wriggling frolicking spermatozoa. By a simple process of crying a portion of the spermatie fluids, and subsequently overcoming its capac-



ity, a practised eye can distinguish with considerable accuracy vital from non-vital semen, which fact enables those at a distance to consult the author upon this point in all cases wherein barrenness is suspected to arise from incompetency on the part of the husband.

At this point I will add that though a monograph entitled "Borning Better Babies," by Dr. E. B. Foote, Jr., was written mainly to interest those who complain of being too fertile, and who seek after what have been called means for "artificial sterility," it contains a chapter on sterility of the involuntary kind, which may be of use to those who are especially interested in this subject. (See page 1248.)

Obstinate barrenness in males is sometimes difficult to cure, and in some instances baffles the skill of the physician. Strange as it may appear, the artificial injection of healthy male semen into the vagina has been resorted to by resolute and determined, but virtuous wives, in their childless despair. I have already mentioned the means by which the artificial injection of healthy male spermatic fluids may be made so as to induce impregnation. In the majority of cases, however, an incompetent husband may be fully restored to all his powers by medicines or electricity, or both. No married pair should despair of having children, until skilful medication has been tried; and proper electrical applications will often cure when the former fails. Too much care to protect the embryo cannot be taken by a wife who, after years of fruitless marriage,

arising from disease, becomes *enceinte*. Such a person is much more liable to miscarry, and miscarriages are apt to render a predisposition to barrenness more confirmed. I have had women under my care who, after having by patient perseverance in my treatment, attained the condition so long sought for, fail to reach the full realization of their hopes, by falls, frights, excessive fatigues, or some cause of like nature, and I have found it quite impossible, in some cases, to restore the tone of the productive organs so that pregnancy would again take place.

When excessive amativeness is the cause of unfruitfulness, some rules requiring self-denial and self-control must be observed, or offspring cannot be obtained. If the fault exists in the husband, he must be less excessive in sexual indulgence so as to allow time for the spermatozoa to attain vital development. If he be violent in colition, then he should use the pads recommended for A and B, so that he may not

FIG. 218.



THE PRIZE MICROSCOPE.

quite touch the mouth of the womb. In some cases of this kind the ejaculatory forces are so great that the fluids will reach the uterus if the glans-penis does not come within one or two inches of it. If the wife be too impulsive, as described in a previous essay on "Excessive Amativeness," she should abstain from intercourse from a week to ten days before and during menstruation, to allow the ova to become fully developed; at the cessation of the menses the husband should induce sufficient excitement in himself to yield the spermatic fluids as soon as the vagina is entered, so as not to arouse too greatly the amative excitement of the wife. As before remarked, her participation in the pleasure is not necessary for impregnation, and in a case of this kind it defeats it. Then, for a week at least, all excitability or indulgence on her part should be avoided so as to give time for the embryo to set. The wife may be materially aided in preserving self-control previous to, during, and for a reasonable time after, impregnation, by avoiding all stimulating food and drink, such as highly seasoned meats, eggs, fish, oysters, clams, celery, parsnips, water-cresses, pepper-grass, condiments, wines, liquors, cordials, strong coffee, chocolate, etc. The plainer the diet the better. Injections of warm water into the vagina daily will produce a cooling reaction and lessen excitability. When pregnancy is found to exist, then moderation in sexual intercourse is necessary to prevent miscarriage. No married couple whose cases come under this classification, should become discouraged before giving the foregoing suggestions at least one year's trial. If they fail, medicines adapted to their cases will in most instances accomplish a triumph.

WHEN UNFRUITFULNESS  
IS CAUSED BY TEMPERAMENTAL INADAPTATION,

Or, when children are born that die in infancy, my advice as a physiologist and humanitarian is to go to a State where divorces are easily obtained, dissolve your unnatural connection and form new alliances, unless your congenial companionship can compensate you for your unfruitfulness. Nearly all such marriages are, in nature, more incestuous than the union of brother and sister in matrimony, for if they are not closely related by blood they are so by temperament. It is usually easier to give such advice as above than to practise it, for many such unfortunate people are so pleasantly united in taste and social companionship that the thought of separation cannot be entertained for a moment. Then there are many more so situated in property and family matters, or so awed by village opinion, or swayed by some other consideration pertaining in some way to money, position, influence, or the opinions of Mrs. Grundy, that such a step seems to them impracticable. From all these sources will come up the inquiry: "Is there any other help for us?" To which I must reply—hardly any.



thing that is legitimate. You may derive some advantage from suggestions given in what I have to say on "Physical Adaptation," beginning on page 1053 but either temporary or permanent reassortment is, in most cases, the only expedient that can be successfully resorted to, excepting artificial impregnation, and then the male germs must be obtained outside the childless family. Many, in their determination to have at least one child, have adopted the first, and a few the last of these alternatives. Some have severed altogether old ties and formed new ones. Those who have a baby every year or two will think these facts strange; but, according to Paul Gide, "the desire for offspring has been, in all antiquity, the prime motive of marriage—the first sentiment that impressed upon the union of the two sexes a moral character and a regular form of marriage." In ancient times fidelity to a barren wife was considered a crime against the gods, and still later, in civilized Europe, the husband of a barren woman was compelled to renounce her. In some parts of India "if the wife is sterile, the husband forsakes her and takes another; if the husband be sterile he cedes temporarily to his brother or one of his male relatives his rights to his wife. This being done to render the marriage fruitful, it is believed to be stripped of all impurity and regarded as a religious duty." In ancient Athens a man could repudiate a wife who could bear him no children, and take another; or, if he preferred, he could take a concubine and legitimatize her children. In the early history of man, as given in the Old Testament, instances are found wherein the fruitless wife gave to her husband a favorite servant for the purpose of offspring. Human nature has not greatly changed by time or the advance of civilization, and though social regulations forbid recourse to some of the means mentioned for becoming a parent, such expedients, nevertheless, are privately adopted by those who have become maddened by disappointment after years of fruitless marriage.

#### A WORD TO JEALOUS HUSBANDS.

Before concluding this essay, I have a word to say to the jealous husband who is, or may become, the father of an only child after years of unproductive married life, followed, after the birth of one child, with years no less sterile. In some cases, the causes producing barrenness are temporarily removed, even when husband and wife have been pursuing no medical treatment for that purpose. A barren wife may, under an unusual, and only temporarily improved condition of the procreative organs, develop a perfect egg, which may be impregnated and become a healthy fetus; or a barren husband, under a temporarily improved condition of his genital organs, may give to the wife a healthy spermatozoon with like result, but subsequent sterility ought not to lead the husband to suspect the fidelity of his wife, because the

reproductive organs of either sex are liable to sudden and temporary convalescence when abnormal, as any other organ in the body. Cases have occurred of persons who have been nearly all their lives blind, but who have suddenly received the gift of sight for a moment, for a day, for a week, for a month, but as suddenly relapsed into the same darkness which had so long enveloped them. Confirmed dyspeptics

will occasionally, or for once, be able to eat a hearty meal without suffering the usual distress, in consequence of a sudden temporary improvement of the organs of digestion. So all the organs of the body are liable to fluctuations. If usually in health they have an hour or a day of disease. If usually diseased, they may have an hour or a day of freedom from that disease. The procreative organs

are not exempt from this liability. Born to a mother who had been fruitful and then sterile. At the age of forty, with the help of this book, she again became a happy mother. See testimonial on page 775.

FIG. 219.



A "PLAIN HOME TALK" BABY.

The foregoing hints are suggested to my mind by some cases of matrimonial unhappiness which have come under my observation. I will relate one in this connection. A lady once called on me who had been married twelve or fifteen years, and had had but one child, and that after nine fruitless years. Her previous and subsequent periods of sterility aroused the green-eyed monster in her husband, and she assured me that her home had been a perfect pandemonium; first, because she did not have a child and, next, because having one, she did

not have more, from which latter fact he imagined he was not its natural father. I would advise all husbands who are afraid to father children which in their jealousy they think do not belong to them, to read my *Philosophy of Child-marking* (see Part IV.), which, I think, will have the effect to make husbands more attentive to their wives, in order that they may so win the love of those who are to become the mothers of their offspring, that a child will be marked by them in embryo life. Jealousy and abuse of the wife will do more to insure the birth of children by her resembling other people than could possibly result from actual impregnation by the spermatozoa of others if confidence and kindness be generally manifested by the husband. Treat a wife badly, if the spermatozoon which impregnates her may have been produced in you, the chances are that the child will resemble some one her mind more agreeably dwells upon. Treat her kindly, and though she may, under a momentary impulse, be impregnated by another, the chances are ten to one the child will resemble you, and, in fact, be your own as much as if the little germ, insignificant in itself, had originated in your own organs of reproduction (see page 1174). But, aside from these suggestions, do not suspect unchastity in your wife merely because, after years of barrenness, she accidentally conceives, and then, after the birth of one child, relapses into the former sterile condition ; such a circumstance is not uncommon when the mother of the first and last baby never for a moment relinquished the chastity and fidelity which Cæsar demanded that a wife should possess.

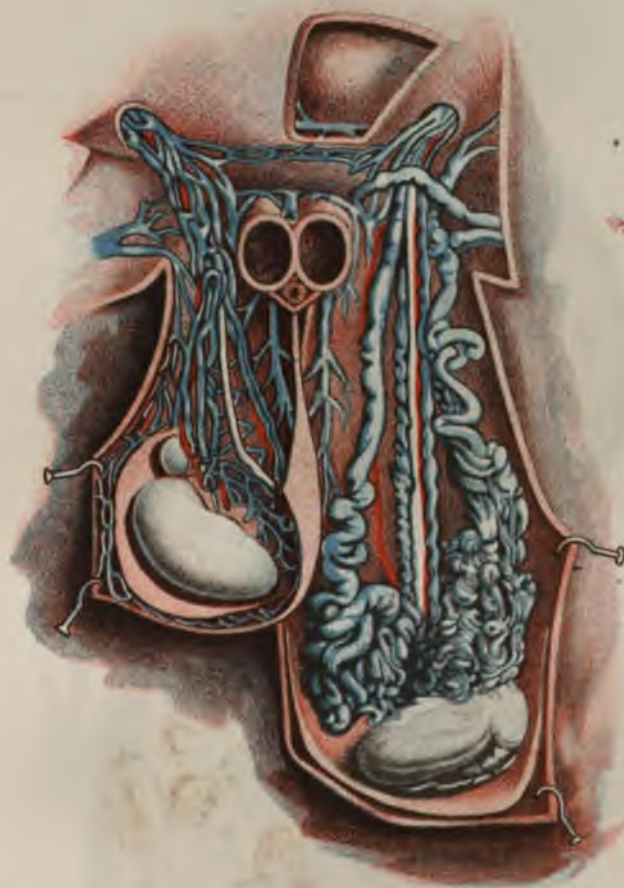


## CHAPTER VIII.

### PRIVATE WORDS FOR MEN.



As a rule, men know more of women than they do of themselves, and I will venture the prediction that a majority of them will read the chapter "Private Words for Women" before reading this one, which is especially intended for them. Still it may be said that they are generally better informed on the structure of the male organism, than the women are on the anatomy and physiology of the female body. The ignorance of men, however, in regard to themselves, is highly discreditable when their advantages for information are taken into account. The writer once directed a patient of good general intelligence, filling a Government appointment, to make an injection into the rectum for pin-worms, and after a few weeks received word from him that he could not use half the quantity of liquid advised. Upon further inquiry, I found he had mistaken the urethra for the rectum! Persons have told me that they were affected with soreness and swelling of the bladder, when, on examination, I found they were talking about the scrotum! Some men actually suppose that the water and the seminal fluids come from the same reservoir, and that that reservoir is the scrotum! A majority of men imagine that the testicles are connected by short direct ducts with the urethra, and that the seminal fluids are injected directly upward into and out of it. A perusal of this chapter will show what a circuitous route the semen pursues to reach the seminal vessels in which it is held in reserve until emptied by amative excitement. I trust every male reader will carefully look over and digest all I have to present in this chapter, for by so doing he will better comprehend the complexity of his sexual organs and probably be induced to take better care of them



VARICOCELE, SHOWN BY ENLARGED AND TORTUOUS VEINS ON ONE SIDE, IN CONTRAST WITH NORMAL BLOOD-VESSELS ON THE OTHER, THE SCROTUM BEING LAID OPEN TO EXPOSE CONTENTS.



PRIMARY SORE.



SECONDARY—"COPPER-COLOR" ROSEOLA.



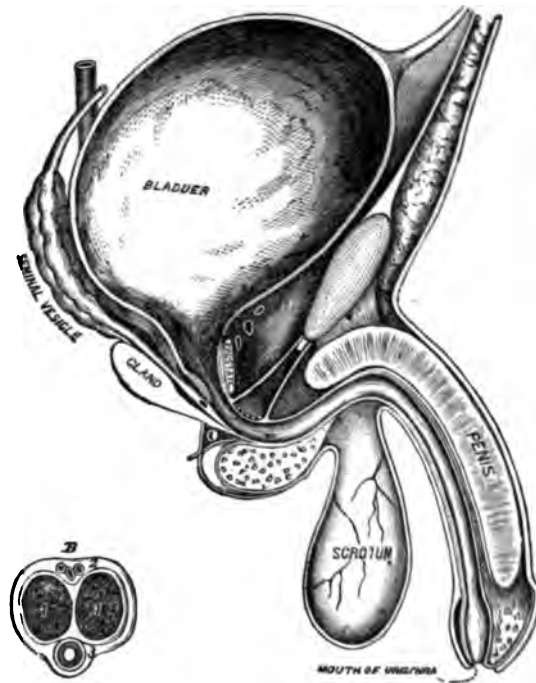
RUPIA.



**The Penis and Its Diseases.**

The penis, two views of which are presented in the annexed cut, is mainly composed of two oblong cylinders, placed side by side, having within a cellular structure, capable of being greatly distended when filled with blood. These two cylinders, which are represented in the small cut B, marked 1, 1, run parallel, leaving a groove above and

FIG. 221.



VERTICAL SECTION OF THE MALE ORGANS.

The small cut marked B gives a view of the organ as it would appear if chopped off with a knife or axe.

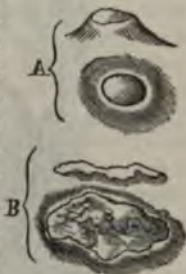
underneath. The upper groove is occupied by a large vein marked 2, and the under one by a third tube called the urethra, marked 3. The urethra is composed of an exceedingly spongy substance which expands at the apex as represented in the large cut, forming what is called the glans-penis. Through the canal of the urethra the urine is emptied

from the bladder, and in sexual intercourse the semen is injected into this canal from the seminal vessels which are exhibited as lying back against the bladder in the large figure. The main branch of the pubic artery enters the penis, the blood from which inflates it during erection. The whole organ is enveloped by a loose skin which is attached at the neck formed by the junction of the glans or head with the external termini of the two cellular cylinders, at which point it doubles upon itself and forms what is called the prepuce or foreskin which, in infancy, completely envelopes the glans and, in adult age, may be drawn over or pressed back of the glans. In repose the penis is shrunken and flaccid, measuring not more than one-third its length and diameter when in the state of erection. When, by amative excitement or titillation, the blood is diverted to the organ, it congests all the cellular and erectile tissue to their utmost limit of expansion; then its average length is five or six inches, and the average diameter an inch or an inch and a half. There are all sorts of deviations from this measurement. I have been consulted by those whose organ distended would not measure more than one inch, and others where it measured over eight inches. Either of these extremes may be regarded as a deformity, and so indeed may be one of four or seven inches. As I am frequently asked the question by letter and otherwise, if this organ when diminutive can be enlarged, let me reply: not a very great deal unless it be shrunken by disease or abuse. When weakened by any cause, its restoration to a condition of health produces a corresponding increase in its vigor and size, observable mainly in cases of spermatorrhœa, where treatment provided to improve nerve-tone and blood circulation naturally results in improved nutrition and growth.

The penis is subject to various diseases and to some deformities. The most common of the former are those maladies contracted from impure coition. The glans-penis may be scalded by acrimonious leucorrhœal and gonorrhœal secretions with which it comes in contact in the female vagina. When the secretions possess unusually poisonous properties, or when they are syphilitic in their character, the glans-penis coming in contact therewith becomes the seat of pustules and sores called chancre, or, in vulgar parlance, "the pox;" and these local affections, unless skilfully managed, diffuse syphilitic poison throughout the entire system, and render it liable to all sorts of ulcerous and, I may say, rotting distempers. There are two kinds of chancre which are represented in Fig. 222, opposite, marked A, B. In from one to four weeks after coition with a syphilitic female, an itching and a slight burning sensation are experienced at the spot where the infection has taken place; next a small red spot makes its appearance, upon which a clear vesicle of the size of the head of a pin soon presents itself, the contents of which speedily become purulent.

Usually a discharge from the sore follows of matter variable in quantity and appearance and, in the advanced stages, greenish or grayish and tinged with red. When the base of the ulcer is quite round and hard it may be regarded as Hunterian chancre, such as is represented by A. The upper one gives a view of the side, and the one below it a view of the face of the chancre of this description. When the ulcer has an irregular boundary, with indentations rather than elevations, and a thin coating of grayish matter, accompanied with fetid and bloody discharges from the numerous small vessels it so rapidly destroys, it is called a phagadenic chancre, such as is represented by B, in which a view is given of the margin as well as the face of the ulcer. The margin of a venereal sore of this description is usually ragged, thin, uneven, and brown or violet colored. The Hunterian chancre is the one which produces constitutional syphilis, but the phagadenic is more apt to destroy the penis and surrounding parts, for it eats away the flesh more rapidly than cancer. It would be useless to attempt to lay down here any rules for the treatment of these dangerous local disorders, for even the attending physician, with all his experience in the management of them, to be successful is obliged to tack about in all sorts of ways to meet the ever-changing phases of the disease, and thereby counteract its destructive effects. Not a A, Hunterian Chancre. moment should be lost by a person who has contracted this disease, in obtaining the advice and medical treatment of a physician in whom he can place the most implicit confidence, for of all the ways to leave this world none are so terrible as to rot with the virus from a Hunterian chancre or to be eaten up alive with a phagadenic ulcer.

FIG. 222.



CHANCER.

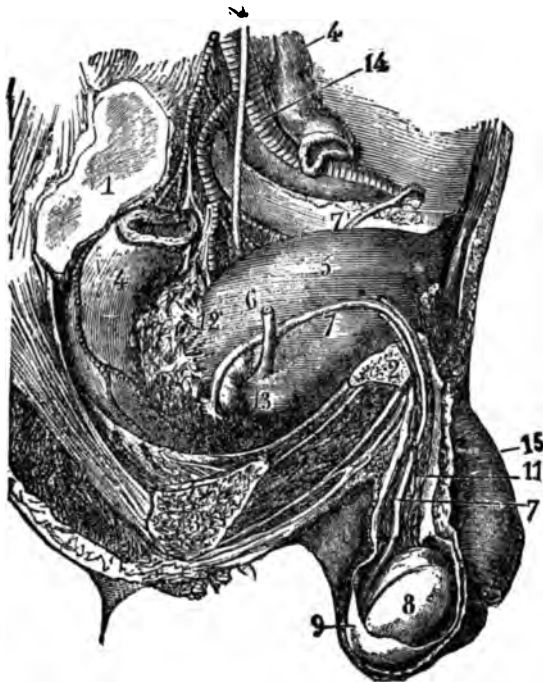
moment should be lost by a person who has contracted this disease, in obtaining the advice and

medical treatment of a physician in whom he can place the most implicit confidence, for of all the ways to leave this world none are so terrible as to rot with the virus from a Hunterian chancre or to be eaten up alive with a phagadenic ulcer.

When men are not cleanly in their habits, the glans-penis may become excoriated by its own secretions. There are located about the neck of this organ, little glands and follicles which secrete an unctuous fluid for preserving the moisture of the glans and foreskin which falls over it. This oily lubricator is as pure as that which is supplied to the eyelids if the parts are kept clean; but when neglected a chemical change occurs which imparts to it a disagreeable odor, a caseous consistence and color, and sometimes an acrimony which produces inflammation and ulceration. These glands and follicles are less active and their secretions less oily before the age of pubescence, but after this period the genital organs should be washed with soap and water every day, and the foreskin pressed back to receive the full benefit of the ablution. If proper habits of cleanliness were observed by those of

both sexes, there would exist less prudery respecting the organs of generation, which in health, with the same care that is usually given to the organs of the face, would be equally sweet and wholesome. No one has the moral right to mingle in social life and come in social con-

FIG. 223.



ANOTHER SIDE VIEW OF MALE ORGANS.

1. Sacrum (bone of pelvis). 2. Pubic bone. 3. Ischium (bone of pelvis cut across). 4. Rectum (fæcal passage). 5. Bladder. 6. Ureters (to carry urine from kidneys to bladder). 7. Vas deferens (tube conveying semen from testicle to seminal vesicle at 13). 8. Testicle. 9. Sheath of testicles. 11. Artery of spermatic cord. 12. Hypogastric plexus, or ganglia of nerves. 13. Seminal vesicles. 14. Artery and branches bringing blood to these parts. 15. The penis.

tact with his or her friends whose body from neck to feet is not as clean in every respect as the face. No amount of eau d'espagne or Florida water about the person will compensate for personal uncleanness. Either from uncleanness or the irritation of venereal secre-

tions, such as gonorrhœal discharge and the pus of local ulcers, warts may develop, singly or in groups, and may be easily recognized by their similarity to warty growths elsewhere, by their being dry, rough, uneven, scaly, and raised. Some writers claim that these warts may be catching or conveyed from one to another, without other venereal contagion. They may be removed directly and quickly by surgery; slowly eaten off by mild caustics; or more gradually disintegrated by alterative, disinfecting, and stimulating powders. If entirely neglected they may develop curious and monstrous specimens for anatomical museums, such as horns of remarkable size.

Affections of the urethra might appropriately find place here, but as they have already been treated in the chapter on diseases of the urinary organs, it would be mere repetition to more than allude to them in this connection. I may remark, however, that chancre of the urethra is a more common difficulty than many of the profession imagine, because physicians are not apt to discriminate between ordinary and syphilitic gonorrhœa. It should be remarked that the virus of primary syphilis sometimes fails to produce chancre on the glans, while it does take effect in the urethra; and the inexperienced doctor pronounces it gonorrhœa of the ordinary type, and treats it as such, but, of course, without success. I have often been called upon to prescribe for cases of this description which had been badly managed by physicians having little practice in this class of disorders, and who did not for a moment mistrust the true character of the venereal poison. I am not alone in believing chancre of the urethra to be a common disorder. Professor Sigmund, of Vienna, stated in a lecture upon the subject, that of four hundred and eighty-three cases of chancre coming under his observation, in forty-seven of them the disease was located in the urethra.

The prepuce or foreskin of the penis is often greatly inflamed when the glans-penis or urethra is affected with venereal disorder. It may also become irritated or inflamed by other causes, such as scalding of the urine, uncleanness, canker, etc. In nearly all of these cases a weak solution of sugar of lead frequently applied every day to the irritated or inflamed part will remove the difficulty. Considering the unhealthy condition of the human family, its habits of uncleanness, and the prevalence of uterine diseases among women, it is well, so soon as the age of puberty is reached, to teach the foreskin to remain back so as to expose the glans. Pressing it back every day for a little while will accomplish the object, and the exposure of the glans will toughen this sensitive part so as to render it less liable to contagion and irritation. As an extra precaution, well worth the trouble, the foreskin should be drawn over the glans when visiting a strange "privy" or water-closet, or when sleeping away from home. Then, in coition, if

the Membranous Envelope were always employed where there are any uterine affections on the part of the wife, disease of the glans, urethra, and foreskin would rarely occur. However acrimonious or poisonous the secretions of the vagina may be the Envelope is an infallible safeguard.

#### PHIMOSIS.

When, after the age of pubescence, the foreskin cannot be pressed back of the glans, the difficulty is called Phimosis. In many cases of this kind the foreskin is very long and its orifice contracted or inelastic. Both for the purpose of preserving the health and cleanliness of the glans, and for convenience in coition, this should be relieved by circumcision or some more modern and painless method as advised farther on. Most of my readers are doubtless aware that the ordinance of circumcision practised by the Jews consists in the entire removal of the foreskin by excision, and observation proves that those people are less liable than others to venereal affections. When habitually covered by the foreskin the membrane covering the glans is remarkably delicate and sensitive, but when exposed by the removal of the foreskin, whether moved back or cut away, as in circumcision, it becomes gradually toughened and consequently made less susceptible to the attacks of any venereal poison which may accidentally, or otherwise, come in contact with it. Thus exposed, it is also less liable to irritations proceeding from chemical changes in the secretions of the glands and follicles. Circumcision is an operation so ancient that it has not been possible to trace its origin or to discover why it was first practised. Away back, and even to a late period, it has been one way of taking scalps or trophies of war from an enemy, and it has also been practised upon the young as a religious rite of sanctification. Whether or not any of its early uses were merely for the sake of health, cleanliness, and avoidance of disease, it is difficult to ascertain; but in the last quarter of a century only have the many possible disadvantages of phimosis been fully appreciated by medical writers, and even some of the popular books within my reach failed to offer the words of caution on the subject which should be known to every parent. The phimosed foreskin is a source of evil in many ways. It is often congenital (from birth); it being one of the earliest causes of infantile ills. The opening may be so small as to make urination difficult and painful, while the retained secretions between it and the glans, called smegma, may cause irritation even to inflammation. Frequent erections and various reflex disturbances may thus come about, the minor ones being incontinence of urine, sleeplessness, fretfulness, and night terrors. The major ones include even masturbation, convulsions or paralysis, as described in the writings of Dr. Lewis Sayre over twenty years ago. It



is sufficient merely to mention these possibilities here, and those who need further information are referred to my pamphlet on phimosis as well as to what I say on the subject later, or wherein I speak of myself as being the first to offer a means of relief without a knife. At a convention of medical men in Albany, N. Y., May 3, 1881, I read a paper proposing gradual dilatation or stretching of the foreskin by means of an instrument I devised for the purpose, and related a few successful cases. My first case so treated was in the winter of 1876-77, and since then I have cured hundreds with this instrument, and had no failures in uncomplicated cases. In 1877-78-79, and 1880, I was free to communicate my success in treating phimosis by this method, and in 1879 when on a voyage to Liverpool, in conversation with the late Dr. Gray, the eminent alienist and physician in charge of the Insane Asylum at Utica, I communicated my discovery without reserve. He was then en route to the great International Medical Convention in Scotland.

In a small proportion of phimosis subjects there are dense attachments of the under side of the foreskin to the glans, which necessitate operation, and now and then the foreskin is so redundant or superfluous that a part may well be spared. In such cases it may be best to resort to circumcision. But in ordinary cases, the simple, easy, and painless cure for phimosis is certainly preferable, and I may say at this writing, that it is an unknown discovery to the majority of the profession, but now and then some one appears to find it out and to resort to it. In the *American Journal of Obstetrics and Gynecology* (1897), Dr. J. L. Morse speaks very highly of it without indicating where he obtained the idea, or claiming originality for it himself. Here is his way of recommending it:

"The advisability of removing the natural protection of the glans-penis, unless it is absolutely unavoidable, must be considered as at least questionable. I feel, moreover, that it is unnecessary, except in certain cases of hypertrophic phimosis, and that equally satisfactory and lasting results may be obtained from *gradual dilatation*. By the exercise of a little time and patience, even the tightest strictures may be overcome, as the young tissues are very distensible and readily adapt themselves to new conditions. Many of the milder forms in infants may be relieved by simply pulling the foreskin with the fingers and breaking down the adhesions, if they exist, with a probe or a director. Even in these cases, however, it is advisable not to complete the procedure at one time, but to do it gradually. In cases in which the phimosis is more marked the first step is to thoroughly dilate the opening. This I do by introducing into it the point of ordinary dressing forceps, and allowing them to dilate by their elasticity. Several sittings, best on successive days, are often necessary to accomplish this. The prepuce

is then gradually retracted over the glans and the adhesion broken up, as in the milder cases. Care must be taken not to produce a paraphimosis the first few times that the prepuce is completely retracted. The mother then pulls back the foreskin daily in order to prevent possible recontraction. Cleanliness is, of course, essential both during and after treatment. *Almost all cases of phimosis, except those in which the prepuce is very long, can be satisfactorily treated by this method, and the field for surgical interference is thus restricted to this class of cases alone.* The advantages of gradual dilatation are the attainment of equally as satisfactory results as by more severe methods, the avoidance of surgical operation, and the retention of the natural protection of the glans-penis."

Thanks to Dr. Morse for this indorsement of cure by dilatation. As this method of treating phimosis will undoubtedly come generally in vogue, I wish it distinctly understood that I lay claim to being its discoverer. I was also the first to devise and patent an instrument for the purpose, as the records of the Patent Office in Washington will bear witness. In spite of the possible disadvantages of phimosis, many come into adult age without especial inconvenience from it until they reach a marriageable age, and some enter matrimony without giving it any attention—unwisely, as I think. My instrument was devised for adults—although by using it with two blades it can be employed on an infant—and my first success was with a married man rather past middle age with quite a family of children, who had suffered the trouble to remain simply because he lacked the nerve to face the surgeon's knife.

Paraphimosis is that state in which the foreskin gets caught behind the glans-penis and cannot be easily brought forward. It occurs to children with a moderate or partial phimosis, who attempt to "follow my leader," and be as smart as other boys. Unless their predicament is soon brought to the attention of an experienced nurse or a physician, there is trouble indeed, and quick operation may become necessary to relieve a state of strangulation, the foreskin being closely constricted and tightly drawn around the neck of the glans-penis. Adults get in the same fix from equally foolish experiments and from inflammation of the foreskin attending chancroidal ulcers. Here, again, the delay of due attention may make a serious and difficult case for the surgeon. A part choked in its blood-supply and exit is in imminent danger, and that is the state of the glans-penis with a tight paraphimosis.

Before concluding my remarks regarding the penis, I should say that this organ is as it were an open door for the entrance of many of the diseases which affect the human race. It is so abundantly provided with absorbent vessels, and so frequently brought in contact with unwholesome secretions, that the system is often poisoned when no local disorder manifests itself. If it were made of ordinary sponge it could

hardly be a better conductor of impure fluids directly to the circulatory system ; and, if this fact were fully understood by the male portion of the human family, dens of harlotry would soon be closed up for want of patronage, and a man would as quickly bend to quench his thirst at a public sewer as visit the abode of the courtesan for the gratification of his amative appetite.

### **The Scrotum and Its Diseases.**

By turning back a few pages, and looking at Fig. 231, the location of this pendulous pouch which encases the testicles will be observed. As remarked before, some quite intelligent men think this is the bladder. All such persons should study the figure referred to attentively, and they will see that the location and offices of the scrotum and bladder are widely different and distinct. The scrotum consists of a wrinkled or corrugated pouch, the skin of which has the same structure as that of the other parts of the body, excepting that it is thinner, more delicate, and perhaps more sensitive. A small raised line begins at the root of the penis and extends back on the scrotum so as to divide it into two parts. This pouch is provided with numerous follicles, which bathe the parts with a sebaceous fluid that preserves their moisture and softness. Here is another reason why daily ablutions of the parts should be resorted to by every man to keep these secretions wholesome and free from rancidity and acrimony. The scrotum itself is only liable to such irritations, dropsical affections, etc., as may affect any part of the skin or cellular tissue, and I shall consequently forbear dwelling upon its diseases.

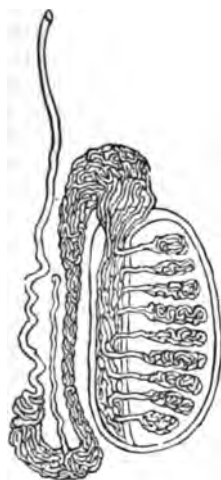
### **The Testicles and their Diseases.**

Under this head I shall briefly refer to not only the structure and diseases of these glands, but to those of the spermatic cords, seminal conductors, vessels, etc. Very few men who possess these important organs, know much about them. And some even carry about more than the average without knowing it ; a United States army recruiting officer and examining surgeon reports finding three full-sized testes and one small one in a recruit. It is difficult to fully explain their structure without employing technical names, which would not be understood by the non-professional reader. I will, nevertheless, try to avoid these, and give as correct an idea as I can without making it necessary to refer to the medical dictionary.

The testicles are formed in the male babe in womb-life, immediately below the kidneys. This provision of Nature is undoubtedly for the purpose of insuring their proper development, for if thus early

lodged in the scrotum, they would be liable to contusions by the blind, unintelligent movements of the fœtus, and to a deficient supply of blood if the spermatic arteries were thus early elongated. While nestling beneath the kidneys a cord proceeds from the lower part of each testicle, down through a canal, on each side of the abdomen, in the groin, to the scrotum or pouch which is to be their future residence. The lower ends of these cords are attached to the scrotum. Between the fifth and eighth month they gradually contract, and with their con-

FIG. 224.



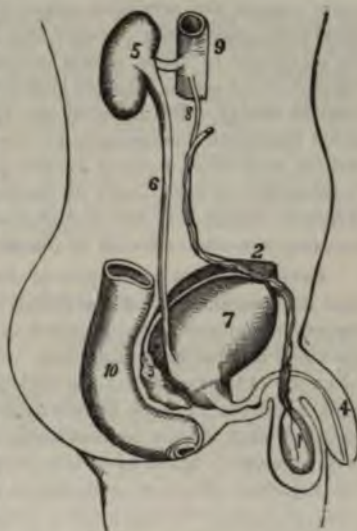
THE INTERNAL STRUCTURE  
OF THE TESTICLE.

traction the testicle on each side slowly descends. As the testicles descend, the peritoneum in the lower part of the abdomen, to which the cords described adhere, moves down on either side immediately in advance of the testicle, forming a pouch which becomes one of its permanent coatings. After its descent into the scrotum this portion of the peritoneum closes at the upper ring by adhesion, and this adhesion advances down the track of the spermatic cord, so that the testicles cannot again return to the cavity of the abdomen. The line of this descent is well marked by the spermatic cord, which is designated by 8 in Fig. 225. The journey of the testicles from their original location near the kidneys down to the pouch which becomes their future residence, is usually completed by the eighth month; but instances do occur wherein one or both never entirely leave the abdominal cavity, and others wherein they tarry in the groin. The detention of one or both within the abdomen, or in the inguinal canal in front of the groin, does not materially interfere with their functions, and hence there are men who are the progenitors of healthy children who, to all external appearances, are without testicles. The same fact exists in the case of men in whom only one of the glands has descended. Unless, therefore, the testicles have made their appearance in the scrotum and been removed by disease or the surgeon's knife, no one having this defect need be immediately apprehensive of inability to perform all the duties of a husband, nor think himself incapable of becoming a father, although there are rare instances in which they are indeed absent or not fully developed. The testicles do not attain their full size till about what is usually called middle age, at which time their average dimensions are about an inch and a half in length, and an inch wide, and three-quarters of an inch thick. The right testicle is usually a little larger and is held a

little higher in the scrotum than the left one. The opposite cut, Fig. 224, represents the internal structure of one of these glands, and the ducts, etc., leading from it. Those lobes, presented one above another, are composed of convoluted tubes and they connect with ducts terminating in two canals which conduct the secretions of the testicles to the seminal vessels, as will be explained by and by. These seminiferous ducts in the testicle are only about one two-hundredth part of an inch in diameter, and when unravelled and drawn out are nearly a mile long!

Let us look for a minute at the wonderful complexity of the procreative machinery of man. Along the track of the descent of the testicle on each side of the body, there passes down what is called a spermatic cord, which consists of an artery and veins and lymphatic vessels and nerves. (See 8 in Fig. 225.) The artery is about the size of a crow's quill. This conveys to the testicle the blood from which the gland with all its peculiar mechanism secretes and generates the vital elements of the semen. As before remarked, many imagine that in coition, at the climax of excitement, the testicles inject the semen directly up into and through the urethra. This is not so at all. As the testicular glands make their secretions, they pass them up through a canal called the vas deferens on each side. These canals have an outer coating like cartilage, but their linings are composed of mucous membrane and their orifices are only large enough to admit a bristle. They ascend with the spermatic cord till they enter the cavity of the abdomen, when they curve over

FIG. 225.



MALE ORGANS.

1. One of the testicles.
2. Stands above one of the tubes called the vas deferens (the white line), where it leaves the spermatic cord, and conveys the semen to the seminal vessels marked 3.
3. This tube runs with the spermatic cord till it reaches the point just below 2, when it strikes off by itself and dips down to the spermatic vessels marked 8.
4. The penis with the urethra passing through it.
5. one of the kidneys.
6. one of the ureters which conveys the urine from the kidneys to the bladder.
7. the bladder.
8. the spermatic cord.
9. the aorta from which the testicle derives its supply of blood.
10. the rectum.

each side of the bladder and bend down and connect with the seminal vessels. (Pause a few moments and look over Fig. 225 with its explanations.) Instead, therefore, of the testicles participating at all in the sexual act, they are comparatively at rest, and at the climax of amative excitement their secretions, which have been accumulated in the spermatic vessels, are propelled outward by what are called ejaculatory ducts and, passing the prostate and Cowper's glands, are mixed with the secretions of these, which contributions add considerably to the volume of the semen, and are believed to stimulate its vitality and procreative energy. Propelled by the ejaculatory ducts and the simultaneous spasmodic contractions of the urethra, the seminal fluids are emitted with much force in distinct jets from the mouth of the urethra. Considering the complexity of the male organs of generation and the abuses to which they are thoughtlessly subjected, it is not surprising that they are often affected by disease.

Sexual excesses on the part of the male are much more disastrous than those on the part of the female. The reason for this is that the spermatic secretions are composed of the most vital properties which the blood is capable of imparting. One drop of semen, such as may be taken up on the point of a pin and placed under the microscope presents hundreds of those little wriggle-tail cells called spermatozoa, and from this fact it may be reasonably inferred that the vital resources must be severely taxed when the spermatic fluids are prodigally wasted. The injurious effects of an excessive waste of them are well known to every physician who has given a reasonable share of attention to this branch of physiology. In the sexual orgasm the female simply gives off a glandular secretion, possessed of no more vital properties, if as many, as the salivary fluids. It is true that in most cases she also contributes a germ called the ovum; but this passes away at its period of ripeness whether sexual intercourse takes place or not. The ovaries are each month ripening ova or eggs, and as rapidly as they reach perfection they pass off, so that the loss of these is of no consequence whatever to the health of the female organs of generation, nor to her system generally. *Pfugger's Archiv. f. d. ges. Physiol.* presents the following calculation to show the difference in production of the germs of reproduction in the male and female. "Of the 72,000 ovula contained in the ovaries of an eighteen-year-old girl (Henle) only about 200 per ovary, or a total of 400, according to Hensen's statements, reach their development. The seminal production in man presents far more imposing figures. Supposing the weekly production to be equal to the average quantity of 226,257,000, as ascertained by observation, during the period from the twenty-fifth to the fifty-fifth year of life, the number of seminal corpuscles produced, while the zenith of genital productivity lasts, would reach the enormous number of 839,885,500,000.



There would consequently be 4,713,700 spermatozoa to one of Graaf's vesicles (ovules), and even as many as 848,463,750 spermatozoa to one ovule which has reached development, a ratio probably never attained in any of the known plants whose favorable economy was so highly admired by Darwin."

Excesses are nevertheless deleterious to the female because the nervous system is injuriously affected by too much venereal excitement. In some cases these excesses lead to undue activity of the organ of amateness, so that even in her dreams she is excited by amative delirium. Sexual excesses and self-abuse on the part of the male lead to what is commonly called seminal weakness, or the disease technically called spermatorrhœa. This trouble is so prevalent and disastrous to health and longevity, I shall leave it here with simply this allusion and resume its consideration in an essay by itself.

#### Enlargements of the Testicular Glands.

The testicular glands are liable to inflammation, congestion, swelling, tumors, cancer, and abscess. I once had a case of abscess of the testicles which had caused an adhesion of the glands to the scrotum, with openings through which the ulcerous matter was poured out. The patient became the father of one child previous to this affection, but at the time I made the examination he had not for a long time passed a particle of semen in coition, and his testicles were nearly wasted away. It was a remarkable fact, however, that his passions, according to his own statement, were even stronger and his pleasure in intercourse greater than they were prior to the partial destruction of the glands. It is supposed by many that the loss of the testicles by disease or castration destroys the erectile power. Frequently it only destroys the procreative power, leaving amative desire and power of erection intact. In some it paralyzes desire, while local titillation will cause erection.

Acute inflammation of the testicle (orchitis)—most often the result of gonorrhœa—is attended with a rapid swelling and intense pain. Perfect rest and sedative poultices (of opium or tobacco) are the main stay in treatment aside from the "tincture of time," of which a liberal supply may be needed. Following the acute trouble, there may be a long spell of chronic, moderate enlargement, with a sense of weight, tension, and tenderness, requiring constitutional as well as local treatment to encourage absorption. Sometimes there remains only chronic soreness and congestion of the epididymis—a soft part upon the testicle on its upper part. Accidental injuries may be the cause of such troubles aside from gonorrhœa. Hard tumors of the testicle may be either scrofulous, tubercular, or cancerous. The size and "feel," form and hardness, help in making a diagnosis; but the points of

difference are not such as can be easily made plain to the unprofessional reader. Hence their omission.

#### Hydrocele.

Hydrocele is a softer and yet dense fulness of the scrotal sac, the testicle itself being all right. Between it and the sac there is formed an excess of serum, a fluid strong in soluble albumin, limpid and faintly yellow. This fluid can readily be drawn off by tapping with a small hollow needle, with no greater pain than the prick of a pin, and with very prompt and satisfactory alleviation, but generally not lasting relief, for the fluid is likely to accumulate again slowly, and need another, and still another such tapping. I find in most of these cases that there is a constitutional blood fault which must be corrected in order to overcome this tendency to serous secretion, but in those whose general health is not greatly involved a radical cure operation can be performed by injecting the sac with some irritant such as iodine, carbolic acid, or thuja. Such an operation, however, should not be self-performed. It should be attended to by either a physician or surgeon. Hydrocele is probably the most common tumor affecting these parts without inflammation, and if it not only feels like a dense bag of water, but also shows some translucency to the light (with a lighted candle behind it) then the diagnosis is made certain enough to justify an experimental tapping with a hypodermic needle. A hydrocele cannot be "reduced" in size or tension by placing the patient on the back and squeezing the parts, while this manipulation will cause much of varicocele or hernia to disappear—by its going into the abdomen. Neither, of course, can a sarcocele or other hard tumor of the testicle be lessened in this manner.

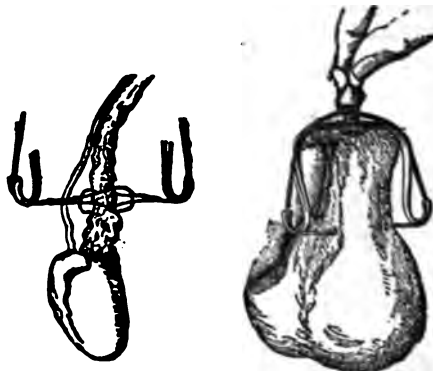
#### Varicocele.

Varicocele is an enlargement of the veins in the scrotum, and alongside of the testicle. The feeling to the hand of an examiner or the patient himself is commonly compared to a bunch of earthworms in the sac, and as the excess of blood in the over-distended vessels gravitates back into the body when the subject lies upon the back, the enlargement almost disappears by so doing. It is the most noticeable after working hard all day or standing long upon the feet. In these points it is quite like hernia or rupture, and so the two conditions are often mistaken; but to the practiced touch of a physician, the feeling is quite different, and the reduction or disappearance of hernia on reclining is generally less easy than in varicocele. Varicocele swelling subsides steadily, though quickly, while in hernia the lump is slow to

move, and may at last drop back very suddenly. Moderate varicocele needs no further treatment than the wearing of a scrotal supporter. (See page 1227.) When it is one of the symptoms of scrotal weakness, the relaxed vessels may regain tone and the trouble disappear under treatment for strengthening the parts all through. When it is heavy, achy, and annoying, a radical cure operation may be advisable. There are many methods, but those simple ones of tying off the veins—ligature—which are easily and quickly done, and soon over, are not as surely curative as those operations by which the surplus veins are cut out. One of the worst cases I ever saw had been twice “radically cured” by some ligature

treatment, and the last operation was done by an expert who was in position to handle more of these cases than any other surgeon in this country. When I conclude that operation is worth while I prefer that plan which obliterates the excess of veins with no chance of relapse, and I never saw or heard of a failure that way; but it may take three weeks to see it

FIG. 236.



A FRENCH METHOD OF LIGATING VARICOCELE.

through instead of one—the time generally supposed to be necessary to recover from mere ligating. Again, I must invite those who would like further information about varicocele to read our special pamphlet on that subject and let this description suffice for this work. In all affections of the testicles and spermatic cord, a physician should be consulted, and for this reason I shall not enter into a minute description of the various diseases of these organs. Physicians who have not had extensive experience in their treatment sometimes make mistakes in deciding upon the exact nature of a case, and therefore it would be useless for me to attempt to make the non-professional mind sufficiently familiar with the variety of diseases to which these organs are subject, to enable the reader to diagnose correctly for himself. The discriminating eye and touch of the experienced physician should be sought in all such cases if the patient would avoid mistakes and the possible ultimate necessity of castration growing out of neglect or mal-treatment. Color plate VII. gives a fine view of Varicocele, contrasting the overstretched veins on one side with normal veins on the other.

**Seminal Weakness.**

This disease is technically termed *spermatorrhœa*, and is usually the offspring of masturbation or self-abuse, although occasional instances are met with in which the difficulty, or the predisposition to it, was unquestionably inherited from the father. It exhibits itself locally by involuntary discharges of the seminal fluids through the orifice of the penis, or, more properly speaking, from the urethra. In the advanced stages of the disease there is also a wasting away of one or both of the testicles. In the illustration, Fig. 227, A represents a healthy testicle, and B one which has become wasted by masturbation and seminal weakness.

FIG. 227.



THE TESTES, IN HEALTH AND DISEASE.

A, represents one in health; B, one wasted by masturbation.

Almost every year some most eminent surgeon, in a lecture before the Young Men's Christian Association, states that involuntary emissions are inevitable occasionally, unless prevented by living in natural relations with the opposite sex. It would seem as though common-sense would teach anybody better; and it would almost seem as if young men themselves ought to know better without being told. It is a rule, having few exceptions, that a person subject to involuntary emissions feels the debilitating effect of them invariably the next morning after their occurrence, while every man of experience knows that sexual connection with a companion who is responsive, if not too frequent, leaves no depressing effect upon mind or body, but on the contrary, a buoyancy of the

I am almost daily called upon by young men who ask if it is not perfectly natural to have involuntary nocturnal emissions occasionally—say once in a week or two. They have been so informed by their physicians! Such young men are excusable, perhaps, as they have not had opportunities of knowing better; but it is disgraceful for any man laying claim to a knowledge of physiology to make such an assertion. It is too true that men who are in the habit of cutting up dead bodies, know too little of living ones. Good anatomists are not always astute physiologists. Those who are reputed to be expert surgeons are apt to be the poorest physicians, and really seem incapable of giving any common-sense advice on subjects like the one under consideration.

former and elasticity of the latter. Throwing aside, however, all reference to palpable effect, with which nearly every one troubled with involuntary emissions is familiar, do we find Nature so ready to cast off its vital substances and nervous forces? Is it a fact that Dame Nature is a prodigal—following the profligate and dissipated example of her sons? The seminal fluids are in part made up of the richest and most vital elements of the body. The best material of the whole system is concentrated in the secretion which contains the germs of a new being. Now, why should Nature throw away this fluid any more than it should throw away blood? We find that in all cases involuntary expenditures of blood are hemorrhages, resulting from a diseased state of the system. The fluids which are of no use to the system are secreted by the kidneys, and thence poured into the bladder to be removed at the convenience of the person. The more solid effete matters are gathered into the colon to be expelled periodically through the rectum. Even these functions are not performed involuntarily unless disease exists. Now, if it were necessary that the seminal fluids should be disposed of at certain intervals, why are they not absorbed and removed by those channels provided by Nature for the expulsion of waste matters, instead of disturbing the rest and quiet of the dreamer and so far deranging the nervous system as to produce depression of spirits, headache, and lassitude the succeeding morning? To all this it may be objected that once a month, the female loses blood, from the age of puberty to the turn of life, in what is called the function of menstruation. If the objector be a physician, knowing as he should, the quality of that blood, I would ask if he really believes that menstrual blood possesses any vital properties? Is it blood at all in the sense in which we employ that term in speaking of the fluid that circulates in our arteries and veins and supports life? Does he not know, and does not every woman know, that when pure arterial, instead of menstrual, blood flows from the vagina of the female, it is at once called uterine hemorrhage instead of menstruation? Does such a physician believe for a moment that any such draft is made upon the system to supply the menstrual secretion as takes place when the spermatic vessels are supplied with their secretions? Will he for one moment place the spermatic secretions and menstrual fluids side by side as possessing equal life and vitality? Is it not a fact that while the spermatic secretions are teeming with life, the menstrual secretions are as effete in their properties as the urine? In another place it will be observed that I speak of the ova of women passing off involuntarily, but only one or two microscopic seeds thus ripen and pass off once a month—an insignificant loss.

It may be asked, if the seminal secretion is so vital, how it happens that married men and others who are perhaps excessive in its expendi-

ture do not feel injury from its loss ? To these queries I would reply, that in natural intercourse there is at least a partial, if not complete, compensation, received in the act, as explained in my essay on the philosophy of sexual intercourse (see Part III.). Excesses, however, will lead to seminal weakness and in due time induce a train of disorders not much unlike those developed by masturbation or involuntary seminal emissions. I have said in one place that it is a rule, having few exceptions, that unpleasant effects follow involuntary losses of semen, such as physical lassitude, mental depression, etc. I might have added that even these exceptions finally arrive at the same condition ; and that the weakness, if not cured, invariably leads to that injury of the parts which induces losses with the urine and at stool ; the weakness finally eventuating in impotency. I know all about it, because I am perfectly conversant with the history of thousands of people who have been affected with this difficulty ; have met them daily in my office for forty years, and probably have had a larger practice in this class of diseases in office and by mail, than any other physician in the United States ; and any medical man who has so little knowledge of spermatorrhœa as to say that it will naturally occur in young men at certain intervals, should lose no time in explaining why Nature provides such a function when it leads to such fearful results. Such advice, unless correct, is mischievous and tends to still further demoralize the patient. I have been told by young men laboring under the supposition that these nocturnal emissions were natural, that they had practised masturbation once in a week or ten days to prevent this involuntary overflow, remarking that they felt better when they did so than when they allowed the loss to take place without assistance. There is not a particle of doubt in my mind that the immediate effect is better. The ultimate effect is worse, simply because it is continually aggravating the spermat weakness which they are endeavoring to palliate.

Some patients have said that they felt better by continuing their practice of masturbation. This was because the habit had induced such an unnatural activity of the testicular glands that the spermatic vessels became congested with the seminal secretion, and the removal of this secretion at such times produced possibly as great a sense of relief as bleeding at the nose in those persons who are subject to congestions in the head. This, however, is a most ruinous way to relieve congested vessels, for no sooner are they emptied, than they begin at once to fill, and soon reach the state of renewed congestion. The proper remedy is to restore them to their normal action, and not still further increase their excessive activity by repeating that which led originally to the whole difficulty. I have been asked what becomes of the seminal secretions if not passed off, naturally or involuntarily. I answer : they are re-absorbed or taken back into the circulation, the



vital constituents going to vital centres to strengthen them, and the earthy properties to the bones, hair, nails, etc., to build up the masculine qualities of the man. (See page 815.) But in no case does Nature dispose of these vital fluids by involuntary emissions, excepting when the parts are diseased.

None of the profuse secretions are thrown off involuntarily in a state of health, excepting the catamenial, and those take place in normal subjects with such perfect regularity that they can be taken care of. If there be drooling from the mouth, there is some disease of the facial muscles or of the salivary glands; if the urine drizzles away involuntarily, or if the sleeping child wets its bed with an unconscious paroxysm we say at once that there is some disease of the urinary organs; if the rectum fails to maintain control over its fecal contents, we know that there is something wrong there. Now, why should there be any involuntary losses of seminal secretions? And when they occur in sleep under an amative paroxysm, or during the day in a drizzling way, why should we not at once suspect disease to exist in the generative organs? If the boy after passing the age of puberty should have an involuntary emission once a month just as the girl has her menstrual flow, why do not all healthy boys have these emissions with perfect periodicity? How does it happen that those who do have involuntary emissions seldom ever have them with that regularity which would enable them to provide themselves with a napkin? Are all boys sick or in an abnormal condition who do not have involuntary emission with perfect regularity once in twenty-eight days? and if so, who can say that he knows of a single healthy lad? For, be it remembered that young men who are afflicted with nocturnal emissions have them at a great variety of intervals; some every night, others every other night, more of them once in a week or ten days, some of them once in a week or two; others once in thirty to sixty days, but no one of them with that degree of regularity which would enable them to precisely forecast the visitation. For instance, any one of the classes mentioned may have them two or three nights in succession and then go for weeks or months without them. Then, if these involuntary losses are natural, why do not these young men feel well, and why do not those who escape them feel ill? Shall we prescribe for those rugged young masculines who have never had these "periodicals?" What shall we give them to make them regular, and how shall we persuade them that they are fit subjects for our advice and medicines? And why should we not prescribe for those who do have them until they come to have the spermatie catamenia with exact periodicity? Now, all this is nonsense, but it has to find place here to answer the statements of those who are so thoughtless as to say that involuntary emissions are natural to men and therefore not worthy of attention.

It is slow work to down old superstitions or false notions, especially those entertained by the medical and surgical profession, and I am well aware that after forty years of wide publication of my views there are many books called "standard authorities" that teach the ideas I so strenuously combat, and yet I do know that my arguments have impressed many minds in the profession as well as out of it, and that the common-sense point of view is making haste slowly. I find that the article on spermatorrhœa in "The Practical Home Physician," probably written by Dr. Henry M. Lyman or Dr. W. T. Belfield, is only advanced to the view that involuntary seminal losses are injurious when followed by distressing symptoms, but as the writer states unequivocally that "every healthy male suffers a discharge of seminal fluid at stated intervals, no matter how continent he may be," I state boldly and without hesitation that this is not true. Again, I find him stating as a matter of fact that "emissions may be the *result* as well as a *cause* of general debility." Here I agree with him decidedly, but must wonder how a sign of health may result from a state of weakness. Coming to matters of opinion instead of fact he asserts that "a seminal emission artificially induced does not and cannot exhaust the individual so much as a natural intercourse," where arguing that masturbation is only apt to be more injurious because "so easily and generally practised to excess." Yet it is such writers for popular instruction who declaim against "yellow quack literature" distributed in free pamphlets and exposing the evil effects of masturbation in a manner which is sometimes overdone. I have always been opposed to imparting any unnecessary scare on this subject, and have seen many an advertising tract which was very objectionable from this standpoint, but between the disseminators of such tracts and the eminently respectable authorities who teach that masturbation is "not so bad" after all, my preference is for the cheap yellow trash, and I am glad the other kind is held too high-priced for the multitude. The fact is, that the overdrawn pictures of the evils of sexual abuse by those whose object it is to scare the victims into their offices, has led to the other extreme of doctors who declaim that it is all a fake, and that involuntary losses are all right. Both are wrong—the truth lies between, and it has been my earnest endeavor to make the truth plain.

#### MY VIEWS INDORSED.

It is pleasant to turn from such an authority to one who deserves to be so considered because his experience has been plentiful, and his conclusions well-founded thereon in reason and common-sense. I am now about to quote several separate paragraphs from "Plain Facts for Old and Young," by J. H. Kellogg, M.D. It is under the heading, Spermatorrhœa (losses with urine or at stool) that I find the following :

"There are those who claim to believe that the disease occurs so infrequently that it is scarcely worthy to be considered a distinct disorder. After carefully investigating several hundred cases of diseases peculiar to men, we have come to believe that it is by no means so rare a disease as is generally supposed to be the case, having determined the presence of spermatozoa by microscopical examination in a large number of cases in which a discharge occurred after urinating or while straining at stool.

"The opinion expressed by many physicians when called upon by patients suffering in this way, that the disease is one of little consequence, and probably does not exist at all, often leads to great mischief; and certainly when such an opinion is given without a close and critical investigation of the case, the patient may well doubt the individual's competence to deal with disorders of this class. Those who have had much to do with cases of this sort, have become thoroughly convinced, not only of their great frequency, but of the fact that their successful treatment requires the most painstaking efforts, and the exercise of the highest skill, not only in the selection and the application of remedial measures to the diseased parts, but in the education and discipline of the patient so as to secure his full coöperation in carrying out those measures of treatment and regimen elsewhere suggested, such as proper diet, exercise, abstinence, etc."

Further along, writing of nocturnal seminal losses, Dr. Kellogg again says: "The great prevalence of masturbation among boys and young men, and marital excesses among married men, has rendered the existence of genital weakness so common that many physicians have come to believe that the occurrence of seminal losses during sleep is a perfectly normal condition, if not too frequently repeated. Extensive observation has convinced the writer that this opinion is an error, and that in a man who is in perfect health, physically, mentally, and morally, such a thing as involuntary seminal losses will not occur, either sleeping or waking. \* \* \* In the treatment of many of these cases, we have invariably noticed as one of the first symptoms of improvement that though the seminal losses still continued without great diminution in frequency, the patient no longer suffered the great depression of mind and body which had previously followed their occurrence. This is a sign of improvement in general nerve-tone, by means of which the disorder will be ultimately controlled. This change in the advance of the disease toward health, is directly the reverse of that which occurs in the march of the disorder in the opposite direction. Patients may often imagine the emissions are doing no harm, though occurring with great frequency, simply because they do not feel any serious effects. But this is only because the general vital tone is sufficiently great to withstand for a time the exhausting drain upon the

system ; but sooner or later, nervous bankruptcy will supervene, and the patient will appreciate his true condition.

" Sometimes the discharge of seminal fluid is backward into the bladder, and so mixed with the urine that attention is not called to it, and the patient is wholly unaware of the mysterious disease which is undermining his health, and goes from one physician to another seeking to find the real cause of his malady and the proper remedy, but obtaining no relief. We have met a number of cases of this sort, in some of which the amount of seminal fluid lost in this way, and the constancy of the symptom, quite exceeded any conception which we had previously formed of cases of this sort. The only method of detecting these cases is for the physician to adopt as a routine practice the plan of making a careful microscopical examination of the urine in every case.

" When a person discovers himself to be affected with discharges of this sort, he should consider the matter deserving of immediate and careful attention until every vestige of the disease is removed. The penalty of neglecting to attend to the matter with promptness will usually be, in the most favorable cases, early loss of sexual vigor, and in the great majority of cases, some worse form of sexual disease, and all the various accompanying symptoms which have been pointed out. The only methods of treatment which can be advantageously employed by the patient himself are such as have been already described as useful in other forms of sexual disease. The question of marriage has been discussed elsewhere in this work ; but we cannot allow this opportunity to pass without reiterating the warning that a person suffering in this way should never think of marrying until the local disease has been substantially cured, as the deepest regret and intensest suffering are almost certain to result when the contrary course is taken."

#### TWO KINDS OF SPERMATORRHEA.

There are, in reality, two kinds of spermatorrhea, which are of so opposite a nature that treatment beneficial to one is injurious to the other. One results from excessive expenditure of nervous stimuli on the organ of amateness and the organs of procreation ; and the other, from a want of nervous vitality in the procreative organs, while the organ of amateness may or may not be abnormally excited. In the former, or where there is undue excitability of the organs of amateness and generation, emissions occur with erections, and usually under the influence of lascivious dreams. The victim is suddenly aroused under the most intense amative excitement, just as the seminal fluids are ejected, or, in some cases, he may not discover what has happened until some time afterward, although he remembers, either clearly or vaguely, the amorous dream under which the excitement and seminal

loss took place. A person predisposed to this form of the disease may have it greatly aggravated by pin-worms in the rectum, or by any affection of the vascular system which produces an itching humor in the urino-genital organs. The worms will so titillate the nerves leading to the sexual parts, that erections and losses of semen result. A slight inflammation or eruption in the neck of the bladder may, when the latter becomes distended with urine in sleep, cause an erection; and if the person becomes sufficiently awakened to get up and urinate, an unnatural emission of semen may be avoided. If he does not, the debilitating discharge is almost sure to take place. Drinking too much fluid of any kind in the after part of the day or at bedtime is apt to cause a distention of the bladder, and then there is pressure upon the spermatic vessels, which produces very much the same effect as when they are congested on the inside with the spermatic secretions. The immediate nerves are awakened to excitability, and the excitement is communicated by nerve-telegraphy to the cerebellum. An amorous dream is brought on with the usual consequences. Engorgement of the rectum with fecal matters may produce the same result. The other form of spermatorrhœa, arising from a relaxed condition of the organs, or, in other words, from a want of proper nervous stimulus to give strength to the spermatic vessels and ducts, is usually the most difficult and troublesome. It is the open door to impotency, and frequently the latter exists with it, or perhaps I had better say, that it continues after impotency has taken place. A person afflicted with spermatorrhœa of this character loses the seminal fluids on almost any occasion giving rise to amative emotion or physical effort. They exude when in the company of women, or in riding, walking, or urinating, and particularly at stool, if costive. Fig. 228 represents a microscopic view of the floating mucus and spermatozoa as found in the urine of one afflicted with this disease. The spermatic fluids may be wasted in this way for weeks, months, and sometimes years, if the constitution of the victim holds out so long, without his being aware of the drain which his system is laboring under, although he cannot fail to suffer from its effects. Some persons of constipated habit, troubled with this form of spermatorrhœa, eject large quantities at every stool; others will merely find, by examination, a drop or two oozing from the urethra. These diurnal losses are, if frequent, more exhaustive than the nocturnal, and the mental sufferings of the patient are usually intense.

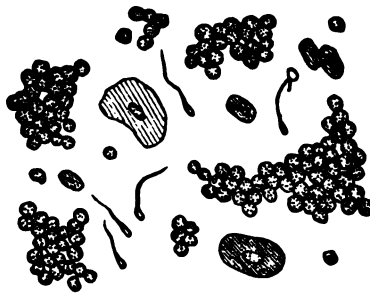
#### COMPLICATED SPERMATORRHŒA.

I have yet to speak of a more difficult and debilitating form of spermatorrhœa than what I have already mentioned, and that is a complication involving both of the forms described. Persons affected in this way will have occasional erections, attended with frightful losses,

while they are almost constantly suffering with diurnal discharges. Their procreative organs seem to be vibrating between an excess of nervous stimulus and an entire want of it. There is seldom, in such cases, any control of the parts. Erections will take place involuntarily, when cohabitation is not thought of, but when desired, the erectile tissue and muscles are flabby and powerless.

The local symptoms attending the several phases of spermatorrhœa I have already given. The constitutional symptoms are various, according to the temperament and idiosyncrasy of the invalid. In some cases only a little nervous irritability or debility is experienced, while

FIG. 228.



SPERMATOOZA, ETC.

Discovered, by the aid of the microscope, in the urine of one having the worst form of spermatorrhœa.

the mind gradually loses its vigor and activity. The victim is no more aware of the gradual approach of imbecility than an old, infirm man, who is losing his faculties day after day and seems unconscious of declining intellect, and feels exasperated if his abilities are questioned. Another is alive to his actual condition—finds his memory waning—his powers of concentrating thought declining—and both his bodily and mental energies wasting away. Still another loses suddenly his mental powers, and becomes idiotic or

insane. Still a greater number live in the greatest mental and physical wretchedness if not in hopeless despair. Hypochondria seizes upon them; they are full of whims and bugbears; they imagine the approach of all sorts of evils; feelings of dread constantly overpower them; and they fear death as if it were a plunge into a pit of burning sulphur or something worse, and nothing in Nature can excite their admiration or awaken within them pleasurable emotions. They are blind to the beauties of the starry heavens or the charming landscapes of field and wood. There is nothing in the wide world that can make them happy. They are the most hopeless pessimists that come under the observation of the physician. A look upward at night into the begemmed dome bewilders rather than enchants their depressed and troubled spirits. Their diseased imaginations are wrapped in a pall of horrors, and though they may occasionally peep through its folds and catch a ray of hope and sunshine, a little thing startles them, and they turn from a world of horrors without to a temple of terrors within. If these mental hallucinations do not harass them they are dizzy-headed, short of



breath, dyspeptic, victims to sleeplessness, neuralgia, pains in and palpitation about the heart, debility, nervous irritability, fretfulness, and melancholy. I do not mean to say that one person suffering with spermatorrhœa has all these troubles; but every sufferer has one or more of them, depending upon the sensitiveness of his nervous organization and the length of time his disease has affected him.

What adds most to the horrors of this malady, which drains off the most vital fluids of the organism, and strikes at the intellect and manhood of its victim, is the ignorance of the profession generally in its treatment. As a rule, medical men treat one form of the disease precisely as they do the other, and this lack of discrimination and discernment aggravates the trouble, and destroys the confidence and hope of the patient. Then, too, local remedies are generally too greatly relied upon. I have already shown that the disease in its various forms is perpetuated by nervous derangements, or I have at least explained the manner in which nervous irregularities produce the losses. There is either an excess of the nervous forces precipitated on the organ of amateness and the procreative system, or else there is a moiety, except in cases of complications such as I last referred to, in which there is a vibration between the two extremes. Consequently the nervous system must receive especial attention. To regulate the nervous circulation, or, in other words, to restore the nervous harmony is, in fact, to effect a cure. At least that is the conclusion I have come to after treating successfully nearly every case which has been placed under my care, and I have had many which were regarded as extremely difficult, and any number of those which were considered incurable under the ordinary systems of medication.

I find even the writer of the article in the "Practical Home Physician," with whom I so thoroughly differed as already explained, saying of spermatorrhœa, when he consents to consider it a disease instead of a regular function, "in most cases it is simply a *nervous disease*." I have italicised the last two words in the quotation. It is quite true that it is a disease, but seldom a simple one, as the writer's statement would imply. Dr. George M. Beard, one of the first old school writers to acknowledge any such disease as spermatorrhœa, wrote as follows to explain the mental depression and digestive disorders that so often attend it.

"The explanation is to my mind quite clear. *The great sympathetic nerve is at fault.* This nerve sends prominent branches to the *stomach* and to the *genital organs*. Therefore, these three—the *brain*, the *stomach*, and the *genital apparatus*—are in very distinct and close sympathy with each other. They form a kind of family. They are in constant telegraphic communication with each other, and any injury of one is soon felt by the other two."

After perusing my remarks at the commencement of this essay, the reader cannot infer that I am unaware that masturbation and sexual excesses are usually the first causes ; that in consequence of children not being properly instructed by parents with regard to the evils of self-pollution, they nearly ruin themselves before they know any better ; that grown-up boys, or those calling themselves men—married men—destroy the tone of their reproductive organs by sexual excesses and other pernicious practices treated of in this book. But all these evil practices induce the troubles which follow, by deranging the nervous circulation, or by robbing the system of nervous vitality. It is true, the vascular fluid or blood suffers from a waste of the seminal fluids, because the latter are largely composed of its very best properties ; but the nervous system is always the more disturbed, and requires the more particular attention. My custom is, to treat the disease with reference to all derangements involved, combining the remedies in such a way as to reach all, and yet the nervous derangements command my greatest care, and the removal of these is invariably succeeded by a discontinuance of the involuntary discharges.

While, as remarked in the preceding paragraph, the causes are usually self-induced, I have met with cases wherein seminal weakness or predisposition thereto, was undoubtedly inherited. There is nothing surprising about this. It could hardly be otherwise, considering the acknowledged excesses previous to and immediately following marriage, and the further fact that many have been unfortunately advised to marry because suffering from particularly obstinate spermatorrhoea, and have thus fathered puny, strumous, devitalized children, before giving themselves time for even the possible benefits of a moderate marital mode of living. It would be remarkable if many children so begotten were not strongly predisposed to weakness and irritability of the sexual organs.

One of the most marked illustrations of this kind occurring in my practice, was that of a young man about twenty-five, who, at the early age of eight years, commenced having nocturnal losses without any knowledge of the practice of masturbation. At first they occurred about once a week ; at the age of sixteen they happened as frequently as every alternate night, and before twenty, while losses continued both night and day, he was entirely impotent. At the time he first called at my office he had been pursuing the advice of various doctors for some five years without material benefit. Having become interested in a young lady whom he desired to marry, he had, on the confident assurance of a cure from one of the most eminent surgeons in New York, made an engagement of marriage. At the close of several months of surgical treatment, as unsuccessful as it was painful, the young man became frantic with a realizing sense of his position. Said he to me :

"Doctor, if you fail, I die a suicide; I cannot tell this young woman of my infirmity; I cannot enter marriage with it; I cannot break my promise. My mind is firmly made up. I have heard of your success in these difficulties, and if you cannot cure me I shall put an end to this wretched existence." A minute history of the events attending the treatment of this case would be too lengthy to be interesting—the ups and downs of the young man's hopes—the encouragements and discouragements of physician as well as patient for the first two or three months; but by the end of the fifth, victory seemed promising, and at the close of the sixth, certain. At the end of eight months, the unmistakable success of the treatment was celebrated by his marriage. Although this was many years ago, since which time I occasionally meet my former patient, the cure seems permanent, and the now middle-aged man is grateful and happy.

#### THE TREATMENT OF SPERMATORRHOEA.

Persons afflicted with spermatorrhœa cannot be too strongly cautioned against the various clap-traps and catchpennies of quacks and empirics who profess to have some remarkable panacea for the disease. It cannot be too generally known that a "one-cure-all" cannot be made to suit everybody's case, even if it be possessed of some degree of virtue; but by far a greater number of the advertised specifics are not only worthless but positively injurious. Some of the more powerful of them tend more to dry up the seminal secretions than to impart power to the vessels and ducts to retain them. Thus sterility or impotency instead of the restoration of the parts is effected. Those who have tried them, need not be assured of what I have stated, but I give currency to these facts, for the benefit of those who have not yet been victimized by these pretentious, worthless, and too often harmful panaceas. It is a false supposition entertained by many, as I have repeatedly said, that marriage cures seminal weakness. There may, of course, be exceptions, but as a rule a cure cannot be effected by taking this step. It simply amounts to this: the secretions of the testicular glands are discharged by a natural process, before time is allowed for them to pass off unnaturally. The weakness and nervous irritability of the organs still remain. Unless cured, premature impotency eventually takes place. With this difficulty it not infrequently happens that a middle-aged man is as powerless in the organs of generation as the majority of men are at the age of eighty years.

I wish here to use a clipping which I took from some periodical, and which must go on its own merits, since the name of the author is not given: "Under almost any circumstances there is danger that the employment of marriage as a means of cure might result unhappily, and as the unpleasant results are of such very great importance to the

welfare of our race, we propose to act upon the maxim already quoted: 'of two evils choose the least,' and of two or more remedies choose the least liable to do harm. A cure can be accomplished in all these cases without incurring any danger of domestic trouble, by a well-regulated hygienic and therapeutic course. We urge upon our suffering readers *Continence*—purity of thought and act—avoiding any and everything capable of inflaming the passions and debasing the mind, whether in the form of literature, conversation, sights, etc. Keep the mind employed upon such matters as are ennobling and instructive—grammar, astronomy, mathematics, geography, languages, etc., etc., are studies that are to be recommended, because, in addition to diverting the mind, keeping it occupied, they at the same time are highly instructive and beneficial and no mental occupation can excel them for purity."

Treatment, to be efficient, must be especially prepared for the case, for an invalid can ill afford time in experimenting in the use of nostrums of doubtful utility. Every reader at a distance should state frankly, in answer to the questions on page 761, every symptom attending his case, so that a correct diagnosis can be given, and all who become my patients may rest assured that my best efforts will be used for their permanent restoration.

#### **Inflammation of the Prostate Gland and Seminal Vesicles.**

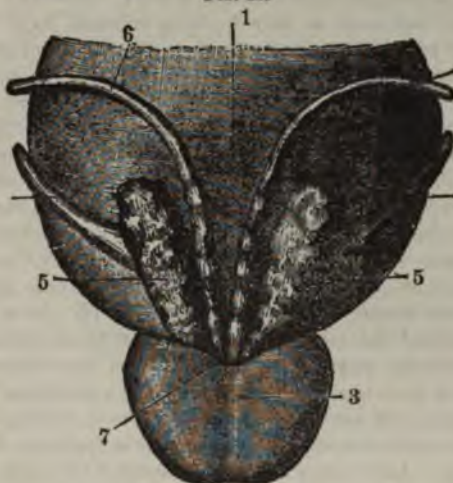
I must now attempt to condense in one page, if possible, the main facts concerning a state of disease to which one author has devoted a book of 240 pages, and yet he has not stated any more than all medical men should be anxious to learn. Probably in almost all cases of spermatorrhœa there is some congestion of the prostate gland and seminal vesicles, but in the troublesome cases these parts are inflamed, enlarged, tender, sensitive, irritable, and produce an excessive secretion which may be as acrid as the contents of a boil. The symptoms will vary with the extent or severity of this local inflammation, but the least of them are: Sense of fulness, weight, pressure, and discomfort in the region of the neck of the bladder, deep-seated in the crotch, above what is technically called the perineum. A soft seat that presses there is uncomfortable. Hard seats are preferred, because the bony framework somewhat relieves pressure on this part when sitting. Sexual desire may be diminished, but in severe cases it is troublesome—constant, intense, insatiable, unsatisfying—and such a condition is, no doubt, often the local physical excitant of that state of psychic mania which will be described soon under the head of Satyriasis. Involuntary losses of some kind are pretty surely frequent, and may be attended with sharp pain or followed by dull aching. Ejaculation in intercourse is commonly premature and may be colicky—painful—or there may be



such local swelling as to send the discharge backward into the bladder. In aggravated cases the parts may be at times cold or shrivelled, and the scrotum painfully constricted; or, extreme relaxation may be the general state, with pendulous and flabby scrotum. A burning sensation is common all through the urethra—a sense of rawness—and the passage of urine causes smarting; or there may be only a painful spot, and urination frequent, and somewhat uncomfortable. The urine is apt to contain mucus, pus, or blood cells, of a kind that enable the microscopic examination to reveal the true nature of the disease. Oozing mucus discharges may or may not exist. The indirect or general symptoms are those already described as symptomatic of spermatorrhœa. These are indeed the tough cases of spermatorrhœa, obstinate and chronic, and often complicated with the remnants of deep gonorrhœa, which has lit a fire that still smoulders.

Besides gonorrhœa as a cause, Dr. Eugene Fuller names also continence (especially in widowers who have been accustomed to normal activity), withdrawal in intercourse, and he adds, habits of “sexual trifling” in any manner that produces prolonged congestion without the natural finality and relaxation. This last-named cause is not accepted by those who recommend male continence in intercourse. As physicians differ on this point, it may be well considered as yet an open question. In the worst cases of the class under consideration, the secretion from the inflamed parts is so excessive and acrid as to cause

FIG. 229



THE PROSTATE AND SEMINAL VESICLES: REAR VIEW.

The prostate gland (3), seminal vesicles (5), vas deferens (6), as seen from a rear view of the bladder (1), and showing the place (7) where the seminal canals pass through the prostate into the urethra, which, however, is not seen here. The vas deferens is a tube bringing the testicular secretions to the reservoirs called seminal vesicles, from which they are discharged by muscular contraction and compression into the urethra. Compare this description with other cuts.

irrepressible itching, heat, tenesmus, and desire for relief, through masturbation which, for a brief spell, partially empties the vesicles, but in turn aggravates the persistence of the disease. Certain manipulative (hardly to be called surgical) procedures and instrumental means can be employed for evacuation, and compression of the over-charged parts, affording relief without the exhausting nervous action and reaction of any form of sexual excitement. The pitiable subjects of this trouble in its most aggravated form are always "between the devil and the deep sea," suffering, as they do, from constant local distress, heat, tension, and pain, unable to divert their thoughts and attention from the one dominant locality, constantly fighting off the propensity to self-relief, until self-control fails, and then overburdened with pangs of conscience, self-accusation, remorse, or self-abasement. No wonder that many have willingly submitted to various surgical operations for extirpation of the testicles, but such extreme measures are seldom to be thought of except in cases of a tubercular or malignant (cancerous) nature. The extremely bad cases are fortunately not common; but those of minor degree of prostatic or vesicular irritation or weakness are nearly as common as spermatorrhœa, and, indeed, those parts are the main seat of the disease as referable to, or located in, the sexual organs. Nothing short of the most skilful treatment by an experienced specialist can overcome physical derangements of this character. Many affected with these troubles prefer to consult a physician at a distance by letter rather than present themselves in person, feeling more or less embarrassment and extreme nervousness when applying in person for examination. All wishing to do so can consult the author of this work by mail without fee and their letters will be treated with strictest confidence.

#### Satyriasis.

The title of this essay is the name used to designate a morbid amative passion in males. This *disease*, for such only can it be called, is barely recognized by the medical profession, entirely ignored by the legal fraternity, and any violent manifestation of it denounced as a crime by the judiciary. While the intelligence of mankind has so far advanced that many life insurance companies have come to regard a suicide as an insane person, whose death entitles his heir to the insurance money, the law in many States of our Union inflicts the penalty of death upon a man who, through the insanity induced by ungratified amative passion, commits an act which is denounced as the crime of rape. Woman, more merciful, if she had power to make laws, would probably consider the destruction of the sexual organs of the unfortunate criminal as a penalty fully commensurate with the magnitude of the offence. Indeed, we had an illustration of this in an orphan asylum



in this State thirty or forty years ago. A boy of ten years of age, who was detected in an act of impropriety toward a little girl—also an inmate of the institution—was spared his life by the gracious matron, who was satisfied with causing the destruction of the offending juvenile's genital organs by the application of that soothing emollient oil of vitriol!

It is perhaps a little difficult always to discriminate between wilful perversity and "moral insanity," but offences are sometimes committed wherein the circumstances attending their perpetration plainly show that the offender was not of sane mind. When the wife of an affluent and highly respected citizen, surrounded at home with every luxury heart could desire, is so afflicted with a propensity to steal, that the husband gives notice to the merchants to watch her and charge her thefts to his account, the doctors and men of law pronounce the insane peculiarity a disease which they call kleptomania. There are ever so many manias, the victims to which should be placed where they can do no harm to their stronger-minded and more fortunate neighbors, but who do not deserve punishment as a penalty for crime. Orderly, sound-minded people need protection from the unaccountable freaks of those who are subject to some kind of mania; but it seems to me no mania is so injurious to the public peace as to deserve the extermination of those who are liable to its attacks.

Satyriasis is most unquestionably "moral insanity," and is generally, not always, the result of sexual starvation. It is a noticeable fact that abstinence from carnality on the part of woman generally leads to partial or entire loss of amative desire, while the abstinence of a passionate man, in most instances, aggravates his amative appetite and drives him to madness. It will be found on investigation usually that the perpetrator of rape has either been so isolated from the society of females as to be sexually starved, or to have been fed on the husks of harlotry till he is driven mad with desire for wholesome sexual gratification. He is like the beggar who has been for a long time without food, or else fed on the pickings from ash-barrels, until, finally, standing before the tempting window of the bakery he madly dashes his hand through the pane for the coveted loaf.

Rape is a terrible offence to a pure woman, married or single; but morally and physically, unless the perpetrator be diseased, she receives not much greater injury than if, under fright she had fallen on something which had inflicted a similar shock to nerve and physical tissues. I say physically and morally, because I am aware that public sentiment makes a good deal more of it. It is due to society that a man who has thus given way to unbridled passion be placed where he cannot again commit the offence; but it is murder to take his life with legal hemp or to dispatch him with the bullet. He is an insane man. He should

be confined and put under mental and moral treatment and low diet. There is better chance of making a good citizen of him than there is of making an honest and peaceable man of a pickpocket or housebreaker. Under the influence of honorable marriage he might become a worthy citizen—a good husband—a kind father. The very act he has committed is not considered a crime in wedlock, although when committed against the remonstrance of the wife it should be so! The law takes no cognizance of legal rape!

That I may be fully understood I will add a word or two by way of qualification of the foregoing paragraph. A pickpocket or housebreaker, or a shrewd swindler possesses traits of character which must be actually eradicated to make him a good citizen; his character must undergo a radical change. The perpetrator of a rape may be a man of genial disposition, of strict business integrity, but of such unconquerable passion as to outrage another for its gratification. His fault may be overcome—his passions subdued or at least placed within his control by marriage. He consequently possesses no quality which must be thoroughly rooted out, such as the reformer always encounters in making a good man of an ordinary criminal, to fit him for honorable and peaceful citizenship. There are more such cruel trespasses committed in matrimony in ten days than outside of it in ten years. And yet wives have no legal redress.

The man conscious of having ungovernable passion and sincerely wishing to reduce it to proper limits has remedies within his reach which will in most cases enable him to maintain self-control. They are—a plain vegetable or frugivorous diet; avoidance of condiments and stimulating drinks; the use of refrigerant medicines, such as epsom salts, seidlitz powders, citrate of magnesia and mineral waters; a daily ablution of the genital organs with hot water, followed with cider vinegar freely applied with a sponge. The local baths should be hot rather than cold, because when warm they produce a cooling reaction. When this treatment proves insufficient, consult some sensible physician who, if familiar with the management of satyriasis and the adaptation of remedies to temperaments, will have little difficulty in affording the desired relief.

To conclude this essay, let me urge a change in public sentiment in regard to this form of disease, in both sexes, which manifests itself in ungovernable amative passion. It is invariably the result of derangement of the procreative system or of sexual starvation. In either case the offender deserves pity, and aid in reformation. In its most flagrant manifestations it is without question necessary to confine the patient until the mania subsides, and there is positive evidence of so complete recovery and reformation that pardon and release will not imperil personal safety.

### Sexual Perverts and Degenerates.

Besides the satyrs just described, there are several other varieties of abnormal specimens of humanity, some of whom are merely different from other folks in their one fault of sexual aberration; some unfortunately born, and of distinctly neurotic taint; some depraved by vicious companionship in early youth; and some on the verge of paresis, and merely manifesting sexual abnormality as an early symptom of a complete mental collapse—soon to come. This condition is comparable to drunkenness in the chance for difference of opinion as to when it is evidence of disease—when of vice, and when of degeneracy. Dr. B. Tarnowsky, of the Imperial Academy of Medicine, Russia, in his book on the "Sexual Instinct," writes: "The medical jurist sees depravity, over-satiated lust, inveterate vice, wickedness, and so on, where the clinical observer recognizes with certainty the symptoms of a morbid condition and the necessity for methodical therapeutics.

\* \* \* \* The actual criminal and undoubted mad-man are two extremes, beside which are found a host of unrecognized sufferers and vicious subjects burdened with an abnormal sexuality. \* \* \* \* Just as children may be born with bodily deformities, a congenital tendency may develop toward perverse modes of manifestation of the genetic instinct." This writer finds such unfortunates in families prone to insanity, epilepsy, and drunkenness, or, among fairly good stock, if the act of parentage occurs while one or the other parent is intoxicated or suffering from syphilis, or severe illness, such as typhoid fever or nervous exhaustion from any cause. Hereditary epilepsy is often found in combination with abnormal sexual instincts, and such subjects have been detected in the commission of acts too horrible to describe when in a state of mind far removed from sane and responsible consciousness. If it be true, as statistics seem to prove, that insanity in general is on the increase in highly civilized nations, it is no doubt equally true that the special phases of insanity evidenced by sexual abnormality are becoming more common. This is not the place to go into so large a subject as the cause of the increase of such insanity, general or sexual, and it is not a healthful or inspiring subject for some, of the most sane mind, to study. Insanity seems to be in a measure catching (whether by microbic or psychic contagion, no one knows), as shown by occasional cases in which man and wife go daft with the same delusions; and there is perhaps even greater risk of contagion by associating with sexual perverts or dwelling upon reports of their peculiarities. This evil, however, is one that is not abolished in proportion as it is ignored, and the frequent offences that bring it before the eyes in daily police reports show that it cannot be kept out of sight and out of mind, and

so some other treatment seems necessary. While considering what might be written of it here, the daily press reports the arrest of a college Professor of high attainments and most respectable family for peeping into the houses of other folks at night, and of an Italian fruit-vender for slashing two women with a knife in the slums of New York. The friends of the promising Professor discovered promptly that his mind was unhinged by overwork, and he was sent to an asylum for rest and treatment. The other coarser and more brutal fellow was treated as a criminal in accord with his savage and dangerous deeds; and yet the psychologist knows that the impelling motive in each case was the same—a queer sort of perverted sexual desire—notwithstanding the fact that one case was a very dangerous man to be abroad, and the other only an insufferable nuisance. But the young freak who finds satisfaction at first in salacious, sly glances at women's undergarments, or stealing them from the clothes-lines, may later develop a savage lust that can only be satisfied by slashing women's clothing or their flesh. The celebrated case of "Jack the Ripper" who, in a few years, disembowelled over a dozen women in London, to gratify his morbid, lustful cruelty, may have commenced his erratic career with some comparatively harmless mode of perverted self-indulgence. The worst fiends of this class are generally beyond middle age. They are the product of early morbid propensities that might have been controlled or checked at the start by proper instruction and management.

"AS THE TWIG IS BENT, THE TREE INCLINES."

Dr. Havelock Ellis, in a book on "Sexual Inversion," treating of the freaks that exhibit impulses only toward their own sex, says that "in most of them, the abnormal instinct began early in life, at puberty or much earlier, and generally a congenital precocity of sexual activity has been aggravated by masturbation before actual addiction to other vice." In the appendix to Dr. Ellis's book is a contribution by one signing herself Dr. K., containing the following: "Perversions of the sexual instinct, it is obvious, are especially liable to be acquired among highly civilized nations, where the custom prevails of keeping the young for as long a time as possible in extreme ignorance in regard to everything appertaining to sexual relations, so that its instinct is left to drift about at the mercy of circumstances, and is consequently almost of necessity diverted from the normal channel. \* \* \* In some cases where there is simply a strong predisposition to inversion, or the premature development of the emotions, such tendencies should be corrected; but all effort leading to this end must begin in childhood, while the feelings and imagination are in a state of plasticity. \* \* \* That an instinct which has, during the period of plasticity, been habitually gratified in some unnatural way, may be rendered utterly incapable



thereafter of finding normal gratification, is well illustrated by the following extract from 'Darwin's Variations of Animals and Plants Under Domestication': 'An animal when once accustomed to an unnatural diet, *which can be effected only during youth*, dislikes its proper food, as Spallanzini found to be the case with a pigeon which had long been fed on meat.' \* \* \* \* The sexual instinct is not an acquired instinct, *but its modes of expression are acquired.*" The neglected youth in high civilization is apt to acquire one or more of the vicious modes.

Dr. Ellis is of the opinion that sexual vagaries, of whatever sort, are not easily acquired except by those with some congenital bias or twist. "Thus, in sexual inversion, we have what may be fairly called a 'sport' or variation, one of those organic aberrations which we see in plants and animals. \* \* \* \* The sexual pervert may be roughly compared to the congenital idiot, to the instinctive criminal, to the man of genius" (off the normal type). "Strictly speaking," remarks the same writer, "the pervert is a degenerate; he has fallen away from the genus. \* \* \* \* The inverted impulse is sometimes considered as obsession developing on a neurotic basis."

#### DANGERS OF SCHOOL-LIFE.

Coming to causes, or more strictly the conditions that favor rather than prevent the fixing and developing of such morbid impulses, Dr. Ellis gives first place to our school system with its separation of boys and girls. He finds "a large number who date the development of homosexuality from the influences and examples of school life. \* \* \* \* While much may be done by physiological hygiene and other means, to prevent this evil in schools, it is impossible, even if it were desirable, absolutely to repress the emotional manifestations of sex in either boys or girls who have reached the age of puberty. The only way to render such manifestations wholesome, as well as prepare for the relationships of later life, is to insure the adoption, so far as possible, of the modes of co-education of the sexes."

All of which leads us to carefully consider whether it may not even be better to give unemasculated physiological education in infant schools to mixed classes—whether, indeed, it would not be the sensible thing to adopt co-education in the teaching of children in sexual physiology.

Other writers on this subject agree that boarding-schools and colleges are the main hot-beds for the planting of the seeds of early vice and perversions, thus blighting the buds of humanity much as insects spoil fruit by laying their eggs early in the opening buds, to make wormy the core of the flower or the fruit. Nuts may be found so full of worms, without a blemish or an orifice in the shell, that there is not a trace left of the true kernel. The meat has been devoured, and

the worms fill the cavity—as many as five or six in a single nut. Some young men come out of institutions of “higher education” so worm-eaten with various vices that there is no trace of wholesome true love sentiment in their blighted mentality.

#### OTHER SOURCES OF CONTAMINATION.

There are, however, other sources of contamination than the risks of close companionship of school-life, and parents who wish to protect children from them must bear in mind possible innate or congenital



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depravity, and by watchful care discover and guard against home-brewed vices that may grow out of over-feeding, local irritations, ignorance, or even mere monkeyishness. Children may do some queer things merely through imitativeness or from their propensity to over-activity, and to see what they can do; so they may happen to make risky experiments with the sexual organs as they do with the nose or ears, when poking peas or pebbles into them. That queer but immortal genius, Rousseau, relates in his “Confessions” that his first sexual sensations were experienced at eight years of age, from a spanking inflicted by a woman teacher; but she soon discovered his peculiar

enjoyment of such punishment, and wisely found some other way. One curious class of perverts find satisfaction in severe castigation inflicted by a woman. Parents who drift along unconsciously with the comfortable notion that their children are too innocent and nice and well-behaved to be addicted to any vice, are often sadly deceived. The particularly nice, clean, studious, gentle, and well-mannered youth may be a very knowing and secretly vicious one, especially needing watching if he be a “Miss Nancy,” with great fondness for chums of his own sex, and no attraction for the opposite sex. Furthermore, though it seems a harsh thing to say, parents should not trust elderly persons of the same or the other sex to have the sole care of, or sleep with, a child, unless they have entire confidence in, and pretty intimate knowledge of the person. It is a terribly unfortunate fact that many a seemingly nice old gentleman or harmless old lady, long before exhibiting other



signs of senile dementia, may develop a preference for childish associates, and a fondness for youth that goes beyond the bounds of decent limitations. Many young persons have informed me that their initiation into the mysteries of sex or to evil indulgences was by the seductions of someone old enough to be their grandfather. Indeed, some very affable and highly cultured elderly gentlemen are the most dangerous elements of any society, because, however often discovered in their seductions, exposure is avoided for the sake of the future reputation of their youthful victims. As Tarnowsky says, these candidates for senile dementia are most likely to be detected and arrested for some public exhibition of themselves offensive to decency. Then the court officials are puzzled how to deal with them, for the mental status of weakmindedness or senility may not be otherwise well marked; and yet the necessity for restraint is evident. Tarnowsky says of them: "While they appear to enjoy good bodily health, are intellectually highly gifted, possess experience, knowledge, and means, they satisfy their morbid instincts with the utmost caution and patience, and proceed methodically in the work of depraving children." Dr. Charles E. Nammack, police surgeon of New York, with opportunity for study of many cases that never come to public notice, writes: "Are these people



OSCAR WILDE.

votaries of vice, or are they insane? If the latter, some lunatics are filling positions of great responsibility and trust." In perverts of middle age, the extravagance and contamination of their vicious influence cannot often be excused by possibility of degenerate mental capacity, and severe punishment has been inflicted on some of them. The most notable case was that of Oscar Wilde, who paid a penalty of two years at hard labor for seducing mere lads to his aid in satisfying his very peculiar "aesthetic tastes." If such "artists" were content to seek out only their kind, possibly there would be some advantage to society in letting the dead bury their dead, and hurry the preparation for burial unnoticed; but most unfortunately they have a dangerous propensity for making new converts to their degraded cult of the guilelessly young and unsophisticated. Because of this, there is really

need of more repressive attention from the police and courts. Facts given wide publicity by the Mazet Committee's witnesses justify the last statement. As Dr. Nammack truly says: "Krafft-Ebing has described nothing which cannot be duplicated here, if those are to be believed whose duty throws them in contact with vice."

This matter was in type and about to be put in plate when a case was reported remarkably confirming the need of the cautions above given. The superintendent of the German Protestant Orphan Asylum, of Cincinnati, Rev. Adolph Foith, was discovered as an arch fiend in the art of seducing the little girls under his care, and he at once ended his life with quick poison rather than face his accusers and the penalties of conviction. He was a man nearly sixty years old, of fine appearance and very genteel and persuasive manners. The Cincinnati *Times-Star* learned from the trustees that "he was a minister of the gospel, of high learning, good breeding, excellent family, and apparently every trait which could recommend him for the position," and he had held similar responsibilities in other institutions for ten years.

As children cannot be well brought up under glass, or without associates of their own age, or caretakers or instructors—since they must run the gauntlet of various dangers from unsuspected sources—the only safe reliance of parents is to gain their full confidence and instruct them wisely and sufficiently concerning many matters hitherto withheld from them, before there is a chance for their minds and manners to be corrupted by evil associations; and this will be just as soon as they exhibit any curiosity about such subjects. It is a great mistake to put them off until they get the idea that some things are too private and shameful to speak of to their parents. Krafft-Ebing's classical work on "*Psychopathic Sexualis*" relates case after case of all sorts of perverts whose first wrong step was taken long before puberty, and many spontaneously.

To treat the subjects of this chapter in a manner entirely satisfactory to the writer would require another book of a thousand pages, and, considering the prevalence of such vices and diseases and their far-reaching influences, it might be fairly charged that they have been too briefly handled here, except that they receive a good deal of further consideration in Parts III. and IV. As there must be a limit to the size of this work, the author would refer the unsatisfied reader for further special information to several dime pamphlets of the Murray Hill Publishing Company treating of the subjects of their respective titles, viz.: "*Spermatorrhœa*," "*Phimosis*," "*Varicocele*," and to "*Sexual Physiology for Children*," by the author of this work, which retails at fifty cents. Furthermore, as intimated in other places, anyone in need of special advice may freely consult the author in person or by letter. See Chapter XII.

## CHAPTER IX.

### IMPOTENCY.



HIS term may be properly applied to that inactivity of the organ of amateness, or that interruption of its nervous or electrical communication with the procreative organs, which paralyzes the erectile tissues or muscles of the latter. It is usually only used in speaking of such difficulties among males.

But it is a physiological truth, promulgated for the first time in this place, unless contained in some medical work which I have not had the pleasure of perusing, that females as well as males are sometimes impotent. I know how the lexicographer defines the term, but I claim for it a more extended application than is usually conceded, and the correctness of my position will be made plain in a few paragraphs.

What is termed "erectile tissue" seems to consist of loose elastic tissue intimately interwoven with nerves, and divided into multitudinous cells, into which, under excitement, blood is forced, filling or congesting them to their utmost capacity. The penis and glans-penis of the male, and the clitoris, nymphæ, or internal labia, and a portion of the vagina of the female, are largely composed of this tissue, and the nerves in these parts being numerous, and in a healthy state sensitive, a little titillation will give them prominence and turgidity. Or, if the organ of amateness becomes aroused without any such local titillation, it precipitates such a supply of electrical stimuli upon the nerves of the organs under its control, that they suddenly become erected. The nervous forces so sent not only contract the muscles of the arteries adjacent to the erectile tissue, by which their blood is forced into the latter, but the heat which the presence of the nervous stimuli creates, also invites the pressure of blood. Every person who has ever immersed his feet in hot water, has undoubtedly noticed how distended the veins

of them become. This is not in consequence of the contact of the water itself with the feet, but because the water imparts its heat to them, while the blood is ever ready to congest any part of the system which is unduly heated. Even the lips of the human face possess some of this same erectile tissue, and any emotions of a pleasurable kind, and especially those of an amative or affectional nature, are likely to cause them to pout and at the same time visibly augment the rich color of the mucous membrane. Now, whether or not the external temperature of the erectile tissue is heightened, so as to be perceptible, when the organ of amateness warms it up with its magnetic influence, certain it is, an unusual degree of heat is present therein, and that there is every incentive given for the blood to occupy and distend it, as well by invitation as by coercion.

But it is not by congestion of the erectile tissue alone that the penis of the male and the clitoris, nymphæ, etc., of the female become erected under amative excitement. All of these organs are also provided with erectile muscles, which, when free from the presence of the electrical excitation, are flabby and shrunken in size, and under excitement, extended and rigid.

The Fallopian tubes of the female which carry the egg from the ovaries to the uterus, not only seem to be spongy bodies, capable of distention by congestion of blood in their cells, but, like the penis, clitoris, and other erectile organs of both sexes, are also provided with erectile muscular fibres. These tubes, commencing at the uterus and terminating in a fringe-like protuberance called the fimbriæ, in juxtaposition with the ovaries, are represented by *T* and *P* in Fig. 230. During coition, if the female is not impotent, the Fallopian tubes are erect, and at the climax of the act, the fimbriæ grasp the ovaries. If the egg or ovum is matured, it is sucked up by them and carried to meet the spermatozoa of the male for impregnation. I know it is disputed by some physiological writers that the fimbriæ grasp the egg under the influence of the sexual orgasm, but their objections are poorly supported, or I might better say, well refuted by facts.

Blundell says: "The vaginal canal during heat is never at rest; it shortens, it lengthens, it changes continually in its circular dimensions, and when irritated, especially, will sometimes contract to one-third its quiescent diameter. In addition to this, the vagina performs another movement, which consists in the falling down, as it were, of that part of the vagina which lies in the vicinity of the womb, so that every now and then it lays itself out flatly over this orifice, as we should apply the hand over the mouth in an attempt to stop it." The entrance to the vagina is also provided with a sphincter muscle, which, in health, contracts so as to prevent, in a measure, the escape of the seminal fluids injected therein.



**May Affect Either Sex.**

Now, then, in my opinion, when the organ of amativeness is cut off from proper electrical communication with the erectile tissue and muscles, so that the erection and proper action of the procreative organs are imperfect, the disease may be properly termed impotency, whether the person so affected be female or male. The disease, whether it exists in one sex or the other, is identical in its nature and effects.

The fact that the organ of amativeness in the congress or parliament of the mental faculties, is the member who governs the amorous

FIG. 230.



WOMB, OVARIES, FALLOPIAN TUBES, ETC.

U, uterus; c, cervix (neck and mouth); v, vagina laid open; o, ovary; t, Fallopian tubes; r, broad ligaments; l, round ligaments. On the left side the fimbriae of the tube are grasping the ovary, which happens when an ovum has ripened, and is ready to be carried to the womb. If this delicate adaptation of parts should never occur, from any cause, all ova are lost and the woman is sterile.

and devoted husband, to whom she had, previous to this attack, been fondly attached. Pancoast mentions the case of a young officer who, on the eve of marriage, received a "blow on the occiput (back of the head) by falling from a horse. He became impotent without any other derangement of his bodily or mental functions, and in his distress, upon discovering his imperfection, committed suicide on the morning fixed for the wedding."

The various members of the body are, in health, under the control of the congress of mental organs. If a mechanic wishes to build a house, Mr. Constructiveness telegraphs to the hands and feet to proceed to execute the work. A congress of the various organs convenes,

and Messrs. Causality, Comparison, Size, Ideality, etc., etc., all have a voice in the matter. But Mr. Constructiveness is the "boss of the job" and sees that the work is done up "ship-shape." But if Mr. Constructiveness is shut off from all communication with the hands and feet by what is termed paralysis, then the hands cannot perform the work, and Mr. C. might as well shut up shop until the telegraphic or nervous communication is opened, and he obtains control of the wires or nerves. Now, amativeness and philoprogenitiveness have agents to do their work. But if telegraphic communication is cut off between the base of the brain and the organs of procreation, impotency is the result.

Excessive study will sometimes so divert the nervous forces from the base of the brain that entire disinclination for sexual intercourse will ensue, to those who previously possessed much amative passion. Here the intellectual organs consume all the brain nerve-force and starve out amativeness. On the other hand, cases occur, in which both men and women, by thinking too much of sexual matters, or from some other cause, which inharmonizes the distribution of the nervous forces among the mental faculties (so that the organ of amativeness is unduly excited), become crazy in ungovernable desires for constant gratification of their sexual instincts. This disease, when it affects females, is called nymphomania; when it affects males, satyriasis.

Sometimes the erectile tissue and muscles of the procreative organs are supplied at intervals with nervous or electrical stimuli from what is called the inferior plexus, near the terminus of the spinal column, while all direct or instantaneous communication between them and the organ of amativeness seems to have ceased. In these cases erections will occur involuntarily or by titillation of the parts, but they generally become flabby and powerless in any attempt at copulation. Such cases are not at all uncommon among males, for I have treated many of this description, and it is probable the difficulty is quite as common among females, although I have not had so many cases from among the latter, nor does it prevent them from indulging in a spiritless union with the opposite sex.

Impotency in either sex does not necessarily produce barrenness. If the testicles of the male secrete semen, containing healthy spermatozoa, and the ovaries of the female produce completely formed ova or eggs, then they are not in the strict signification of the term barren. In fact, impotent women do in many cases conceive by the spermatozoa being injected into the mouth of the womb, and there finding a matured egg which, if not taken up by the fimbriae of the Fallopian tubes during coition, may have entered and descended one of the tubes a short time before.

The organ of philoprogenitiveness is often active when the organ of amativeness is powerless, and the difficulty in the way of the impo-



tent man, if he has healthy spermatozoa, lies in his inability to penetrate the female organs. Still, under a local excitation of the parts, if taken advantage of, the act may be accomplished. In some cases, amativeness may even be active, and the person may have the strongest desire for sexual intercourse without the ability to perform the act satisfactorily. When this is the case, amativeness is sufficiently stimulated by the nervous forces in the brain, but either the nervous communication between it and the sexual organs, or else the nerves in the sexual organs themselves, are paralyzed or partly so.

The causes of impotency are as numerous as those which produce nervous inharmony of any kind. Perhaps the most common are: intemperance in the use of stimulating foods and drinks, masturbation, and sexual excess. Among women, sedentary habits may be the most frequent cause. Their muscular systems become relaxed, and their nervous systems disordered for want of pure air and out-of-door exercise.

#### **Mental as Well as Physical Causes.**

The conditions necessary to a full and satisfactory accomplishment of the generative act are so numerous and so complicated that there may be many causes of failure. The erectile function is dependent upon the mental as well as upon the physical state, and upon the co-operation of both. Of course the first essential in either sex is integrity of the parts. A few unfortunate individuals are born with deficiency or malformation, and some are very slow to reach full development. Such persons are more or less asexual, so-called, and, fortunately for them, they are often as much so mentally as physically, having no inclination for marriage. In many ways they are likely to be "not like other folks," but they do not miss their loss in the way of suffering for any unsatisfied call of Nature. When there is merely malformation or partial incapacity, those coincidences of lack of ability and of desire may not occur. Now and then a physician may find a man in whom "the parts are all there," while the desire is lacking; and this state of affairs is far more common in women. I shall not here explain why sexual apathy is so much more common in women than in men; but in either sex it is of course a sufficient cause of impotency, as well as a predisposing factor in incapacitating a partner in marriage.

One of my peculiar cases was a young man of good family and fair health, but lacking in magnetic vigor and vim; who had lived continent until twenty-five years old, never having any disposition to act otherwise, and then he "made a good match" with a lady acquaintance (Note: I do not say lady-love), who was acceptable to his relatives as well as to himself. It was all proper, no doubt, as well as conveni-

after these responsible officials at headquarters and find out what is wrong with them when there are signs of local or general disturbance in the human nervous organism.

Investigators in what is called minute or microscopic anatomy long ago ferreted out the units or cells of the nervous system, and found the gray or ash-colored brain-substance to be made up of countless microscopic "cells," connected together by innumerable "processes," lines, cords, or wires, in comparison with which even a spider's thread would be larger than any bridge-cable ever constructed; but it is only since 1890 that they have discovered and been able to describe just what difference there is between a nerve-cell in its healthful and unhealthy states. This is an interesting achievement of modern research, and its main facts will be now presented as briefly and clearly as possible.

The elements or units of the nervous system are now called *neurons*, and as that is an easy word to speak and write, the name may as well be made popular as well as technical. The neuron consists of the nerve-cell and its branches. The cell, or body, part, is of various forms. It consists of protoplasm, or soft, egg-like substance, with a part more condensed than the rest, and called its nucleus, but it has one or more branches, which spread out and divide like the roots of a tree, to connect the neurons with each other and with the nerve-cords or wires that extend to all parts of the body. Our Fig. 233 exhibits one neuron with its branches, and pictures one leading away to a sense-testing nerve bulb located, may be, in the tip of the finger. The *bulb* is the "transmitter" of an impression, and the *neuron* the "receiver." If the news be important the neuron informs other "operators," whose business it is to know, and perhaps the result is the neuron becomes the "transmitter" of a command or telegram along another nerve-cord to a "receiver" nerve-plate in a muscle that responds by an action that jerks the finger-tip away—if, for instance, it has come in contact with a lighted match or sharp tool. The neurons are then operators whose function it is to receive impressions from all the special senses, interpret or arrange them, distribute the news as does an "American Press Association" to all its subscribers, and lastly to act promptly, even automatically, or deliberately, which means that many neurons confer in what we call unconscious cerebration before any one of them is authorized to issue an order for action. This brief outline of nerve-anatomy and action is but a mere glimpse at the wonderfully complex functions by which we feel, think, and act, and is only preparatory to showing what happens to the neurons when they become ill, and make us feel, think, and act abnormally.

## NEURASTHENIA.

This word, of comparatively new coinage, was not employed by physicians when the first editions of this work were published, and yet has come within the last fifteen years into such common use that one may frequently find it in ordinary literature, taking the place of the old familiar phrase of nervous debility. It is a new name rather than a new disease that confronts us; but it has come to stay, and we accept it as a name that is employed wisely and well to cover a large range of nervous symptoms which may occur without any actual lesion or permanent destructive change in nerve-tissue, such as occurs in *organic* nervous diseases. Neurasthenia simply means nerves without strength. Those who have read the brief summary of constitutional symptoms of spermatorrhœa on page 640, have already a fair idea of what constitutes neurasthenia, but, when combined with spermatorrhœa, it is better called sexual neurasthenia. As a similar train of symptoms may arise from other causes, and be indicated by some other special name, it may be well thus early to emphasize the fact that neurasthenia in general is not invariably due to the exhausting effects of spermatorrhœa, since over-work, or worry, sudden shock or extreme grief, as well as acute fevers or other exhausting disease, may afford the foundation for it; but, remembering also how common neurasthenic symptoms are among women as a result of uterine or ovarian irritations, it is fair to say that at least three-fourths, if not more, of all cases of neurasthenia may be properly prefixed with the qualifying adjective indicating sexual origin. It is further true, that even those cases of neurasthenia not developing out of disease of the sexual system are liable in time to be attended with symptoms of irritability of the genito-urinary organs, such as frequent urination, involuntary seminal losses, impotency, or, in women, with local pains, menstrual disorders, and other evidences of irritation of the womb or ovaries.

While, therefore, we must recognize cases of neurasthenia aside from sexual diseases, based often on brain-fag, nervous shock, eye-strain, dyspepsia, etc., the fact is that it is most commonly associated with more or less symptoms of sexual disorder, and it is in this respect that the subject has received most attention from physicians. The late Dr. George M. Beard, who awakened a deep interest in it by a series of articles written about the year 1879, was probably the first among old-school physicians of this country to recognize and urgently advocate that involuntary seminal losses may be pathological—the basis of serious disease—a field in medical literature which I had occupied for a period of over twenty years previously. There are some good reasons to suspect that he had been an interested reader of my publications. From the predominance of nervous symptoms, and perhaps from some indis-

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position to regard spermatorrhœa alone as a disease, but rather as a symptom, he was accustomed to write of it as sexual neurasthenia. Though he did not go so far as to consider involuntary losses in all cases as evidence of disease, he forcibly combated the disposition so common among his associates to regard them as of no consequence, even when followed by such complaints as headache, languor, nervousness, and general or local pains. He said: "It is the common belief that patients suffering from this form of disease magnify—create symptoms which really never existed. This belief," he adds, "is an erroneous one; there are more persons who overlook many of their symptoms, forget them, or regard them simply as signs of health, than of those who create symptoms that do not exist, or over-estimate their importance." He further described many who drag along, never knowing what real health is, handicapped unnecessarily by a variety of troublesome symptoms which, though for awhile permitting a fair amount of activity of mind and body, in time lead to serious or incurable conditions.

### BURNING THE CANDLE AT BOTH ENDS.

Almost enough has been said of the causes and symptoms of neurasthenia, a disease which is said to be more common in the United States than in foreign countries. Some think our climate induces an over-excitability state of the nerves, by which they wear themselves out prematurely, but whatever the stimulus to drive, hurry, cram, jam, haste, and waste, certain it is that we are a nation of energetic, ambitious hustlers, making heavy calls on "nerve" in the every-day affairs of life. So we hear much on all sides of confession of over-work, too close application to business, etc., etc., and yet, to some who lend the ear in the medical confessional, the doubt often arises whether all this could not be pretty well borne if it were not for the added strain of over-play, the "early indiscretions," and late night-hours dissipated in amusement, and the insatiable appetite for emotional excitement. Too much of a good thing is good for nothing, whether work or fun; no doubt some exhaust themselves, and bring on premature old age of the nervous system by over-work alone, others by dissipation, but the lively, all-round man of the world, who devotes himself assiduously to work, and also indulges in all that's going on in the way of so-called fun, is burning the candle at both ends too literally, in consuming his nerve-forces at both top and bottom of the spinal column as well as along its whole course. Neurasthenia is the warning signal of danger for such reckless men, but if, by plentiful use of narcotics and anæsthetics, such as alcohol, tobacco, and opiates, they still the cry of the nervous system, its disorganization, or utter break-down in paresis or



general paralysis is one of the ways that Nature has of settling her account with them.

Records of Ward's Island Insane Asylum, from 1885 to 1895, show that one-third of all the cases that terminate fatally are of paresis, at ages from twenty-two to seventy-nine. Neurasthenia may lead, through impairment of the action of the vital organs, to break-down and death by almost any of the wasting diseases, or render its victim easy prey for some infectious disease or epidemic, but the transition from nerve-exhaustion to paresis is a direct, if imperceptible, change from a functional and curable to an organic, incurable form of nervous disease, and affords a good opportunity to study the difference between the two in their nature, or what doctors call their pathology.

It would be an endless story to tell all the queer mental and nervous symptoms complained of by neurasthenic sufferers; but here is a list of those most frequently occurring, whether real or imaginary, reported by cases of neurasthenia of whatever origin, in men and women. It is seldom that one sufferer presents all—at least, not all at one time—though in the course of this variable disease, with dropping out of one symptom and creeping in of another, even one neurasthenic may run through the list; perhaps, more accurately, the list runs through him. Some of the most dominant, though not invariable symptoms, are debility, weakness, disinclination for effort, mental or physical, and a sense of incapacity, with loss of memory, mental depression, and abject hopelessness. Perhaps more distressing than the debility are the symptoms of irritability, mental or nervous, such as fretfulness, restlessness, peevishness, "groutiness," tremors of muscles, jerking of limbs, twitching of eye-balls or lids, itching or formication (a feeling as though insects were creeping on the skin), chilly feelings, hot flashes, or sweating in parts or all over, wakefulness in hours for sleep, and drowsiness during the day. Still other symptoms are aching eyes, blurring of sight, inability to use the eyes long, ringing sounds in the ears, palpitation of the heart, catching pains there, poor circulation, cold extremities, a sense of fulness or oppression in the head, aches on the top or back of the head, a feeling as though the brain were "in a vice," dizziness, vertigo, explosions in back of head, pains all down the spine, dull backache, heat in small of back, shooting pains and neuralgia in any part of the body. One having all these is surely deserving of pity. He is a wreck, but not, perhaps, a hopeless one.

Some neurasthenics are of fair exterior, or present the outward aspects of health, and exhibit their nervous weakness only in spots, or under special circumstances that arouse or depress them. Some seem especially to lack nerve-balance and self-control, and have periods of excitement as though a storm swept through the emotional nerve-centres. Many are easily influenced, either to laughter or weeping, to

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sympathy or anger, through inability to hold the passions in check. Advice to sufferers from neurasthenia will be presented later.

### HYPOCHONDRIA.

In those cases where hypochondria exists, Dr. Beard regarded it very properly as a symptom—just like sweating of the hands, backaches, dizziness, tremors, palpitation, or cold hands and feet—a result of the exhausted state of the brain, which, like other symptoms, disappears with improvement in general nerve-tone. Opposing the too common and slipshod way of shirking attention to obstinate subjective symptoms by dubbing them “only hypo” (hypochondria), he said: “In the majority of cases of hypochondria there is some real and demonstrable disease as the basis of the mental trouble which can be found if we but look closely into the condition of every organ; the term hypochondria being quite often a cover for our lack of thoroughness in examination. Very rarely do I find a case of morbid fear of disease where the kidneys, liver, stomach, and the prostatic urethra are in health.” In fact he found, as all physicians will, who look deep enough, the cause of hypochondria where the ancients did who happily named it, that is, under the lower border of the ribs—in the abdominal regions—in conditions that send either reflex nervous influences, or oppressing poisons in the blood, to the brain.

In hypochondria there is, as part of the disease, a tendency of the victims to magnify their ailments, but it and they have, at bottom, a true foundation in disordered vital functions, which may, by due attention, be cleared up, or, by neglect, be permitted to develop a form of insanity called melancholia. Hypochondria is therefore one phase, or symptom, of that lowered state of the nervous system which we call neurasthenia, but it is only one of many peculiar fears which the affected mind conjures up. One suffering from hypochondria may dread to meet other persons, especially strangers, sometimes even friends, and for short we say he has anthropophobia; another may dread to be alone, monophobia, while others become subject to curious, fortunately rare, fears of particular places or acts. For treatment look a little farther on.

### HYSTERIA.

An attack of hysteria, with exhibition of hilarity, excitement, and convulsions, may not at first thought seem to indicate a lowered state of the nerve-forces, but it is, in fact, the result of an irritable and explosive state of the emotional and lower nerve-centres, with lack of power and control in the higher. It is, like hypochondria, a phase of neurasthenia, and not liable to occur in a well-ordered, well-nourished, and well-toned nervous system. It is often associated with sexual nervous irritations, arising from diseases peculiar to women, and takes its



name from the womb (Greek, *hystera*), but it occurs also in men, and more often in boys, from disturbances arising in sexual neurasthenia, and it may occur either in men or women from a neurasthenic state not dependent upon sexual disease. Hysteria is, however, far more common among women than men, while the reverse is true of hypochondria.

Often the description of some one case in the patient's own way gives a better idea of a disease than mere general statement of the symptoms. While writing this there comes to hand a letter from a woman who is placing herself under treatment for a severe and typical form of neurasthenia, bordering on hysteria, brought on or precipitated by an attack of La Grippe about four months previous, though evidently the final collapse was invited by causes dating back even to childhood, as well as five years of working nine hours a day, with no time for dinner, as a telegraphic operator. Besides being melancholy, she is sometimes overcome, when about to go to sleep, by a sort of frightful paralysis of body and mind. "Now, when I begin to feel that way, I sit up and it passes off. My sleep is restless—dream all night long; have not had a good night's rest in five years; have had to give up my position on this account, as my nerves were too unstrung for work. Am always drowsy, sleepy, good-for-nothing during the day. Hands and feet always cold and moist. Headaches every day—sometimes so severe I fear it will affect my mind; half of my head aches, but a constant pain in back of head near the neck; also very dizzy at times, and rush of blood to the head when the least bit excited; heavy, oppressed feeling, expecting all the time something terrible to happen. \* \* \* Chronic catarrh. \* \* \* Palpitation of the heart, seems to flutter, then stop, and I get short of breath. \* \* \* Indigestion, I feel hungry after a hearty meal, and have a sense of trembling and faintness in stomach; bowels constipated. \* \* \* I feel very weak, nervous, and tremble all over, and sore, as though I had been beaten with a club, and sometimes it seems as though the life was gradually dying out; it commences in my wrists, or pulses, and they get weaker and weaker, my sight becomes dim, and my face turns very pale—I have completely fainted away in such spells." She has no doubt given a very accurate account of her condition in spite of her distressing mental hebetude, and such are the symptoms, with infinite variety, and no end of new combinations and individual peculiarities, which can all be cleared up by raising the tone of the nervous system, as a fog clears with the rising sun.

#### TREATMENT FOR NEURASTHENIA, HYPOCHONDRIA, AND HYSTERIA.

Let it first be understood that the function carried on by Mr. Neuron makes him tired, uses him up, so to speak, and tends to unfit him for business. This is compensated for by his power to recuperate,

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to recoup his substance from the blood, and "pull himself together again;" but if he is held down to long hours in business, "rushed," or "rattled," he misses food and sleep, and shows signs of exhaustion. How does he appear then? The observers who have caught him in this predicament under the microscope say that this is how the neurasthenic neuron looks: "There is a gradual diminution in the size of the cell, a lessened power to absorb staining substances (dyes which color some particles more than the rest), that may be regarded as evidence of imperfect power of nutrition; vacuolation (open-like spaces), which may be taken as proof of the using up of its own substance, and alteration in the nucleus (the 'heart' of him), which is decreased in size, and changes from a smooth and rounded to a jagged and irregular outline. As the cell gradually alters in its structure by constant work, it becomes more and more exhausted, so that finally there comes a time when it is no longer capable of sending out impulses, and requires a period of rest to make up what it has lost of form and substance, and to regain a store of energy. \* \* \* These results have been reached by stimulating cells to work in living animals either by electricity, or by keeping up movements, such as running, or by exposing one eye to light while the other was kept dark, and then contrasting the appearance of the cells made to work with those which were kept at rest. It is evident, then, that we can now study the exact mechanical and chemical effects of nervous activity. *When a stimulated cell is allowed to rest, it gradually resumes its original appearance; but the period of rest must be adequate.*"

Almost everyone who reads this description of a "played-out" neuron will be likely to see many points to remind him that "that's just how I feel myself when I'm used up," and therefore not be inclined to doubt the truth of the observation. It may be of use to him if he will take pity on the countless millions of neurons which constitute his nervous system, and remember that it is when many of them feel gaunt, vacuous, and jagged, that "he knows how it is himself"—a phrase which, though common, needs no apology, since it fits so well.

How does Mr. Neuron recuperate? His means of "bracing up" are much like our own, but his success in the attempt depends on what we do for him. The "bread and butter question" is with him, as with us, the one of first importance. He lives on what he feeds on, and takes the best he can get. Anatomists say "there is no part, every cell of which is so constantly bathed in the vital fluid, as the neuron." To cut off his supply means paralysis for him, and for at least some part of the man he belongs to. It is a rather remarkable fact, though, of course, a very conservative factor in human economy, that when a man is compelled to starve, and live by self-consumption, the nerve-substance of his body is the last to be called upon to give itself up "to

keep the pot a-boiling," the fires up, and life's forces at work. It is, indeed, for the good of the whole organism that the nerve-man has the nerve to preserve himself till the last hope of food is gone; but, toward the end, Mr. Neuron, too, literally caves in. Though he long shrinks from yielding, yet at last he shrinks indeed, and wastes to a mere skeleton of a nucleus—so far gone that, if at this late day food comes to the rescue, it is many weeks before he can be made to look like himself again. *The lower the state of nervous exhaustion, the slower the recuperation.* Another fact to bear in mind is that Mr. Neuron is particular, and wants good nourishing food, and is easily irritated by foul, impure things. Neuralgia has been well defined as the cry of the neuron for better blood. So even when the body as a whole is in a fair state of fullness, there may be hungry and unsatisfied neurons that have not had their fill of what they need, because the blood did not bring it to them; or there may be neurons that sicken and wilt from the stupefying effects of poisons circulating in the blood, as in cases of acute fevers, syphilitic infections, and chronic autotoxæmia, where the system is charged with its own excremental waste matters when they are not being eliminated fast enough. The man who is bilious, jaundiced, diabetic, rheumatic, or uræmic, is sensible of the fact that all his neurons are depressed, under a cloud, or in some state of self-blood poisoning. The neurons may be irritated to such a degree of irrepressible excitement as to develop explosive storms made evident by epileptic fits, or attacks of acute mania.

The subject of autotoxæmia, or how, why, and when a man becomes ill in many ways through accumulation and retention of blood-poisons produced within himself, thus accounting for a large range of chronic diseases, is very thoroughly treated, and made plain for the average reader, in a pamphlet entitled "Autotoxæmia—self-blood poisoning," by Dr. E. B. Foote, Jr., and those who wish to know more of the subject than we can tell here will find much of interest in that monograph. (See catalogue of Murray Hill Publishing Company.)

It makes little difference as to the appearance presented by Mr. Neuron whether he has been abused, over-worked, ill-fed, or poisoned. In any event, he becomes shrunken, pale, haggard, vacuolated, and in function inattentive, irregular, careless, unreliable. Shakespeare said: "O that men should put an enemy in their mouths, to steal away their brains!" The effect was evident, but the almost omniscient poet didn't know, as we do now, how alcohol acts directly on a man's neurons to steal away their power. Andriezen has discovered that when a man "gets a jag on," the neurons become "jagged" too. The first effect is to cause softening and swelling of the neuron's branches, and next the substance of the neuron itself becomes disintegrated and vacuolated—"channelled and tunnelled by holes and seams of liquefac-

tion." Along with these discoverable alterations of substance go the noticeable symptoms of drunkenness, the weakened faculties of attention, memory, and will, and the loss of muscular power and steady control. "If this destructive process has gone on beyond the power of regeneration, the disease progresses to chronic alcoholic dementia. If, however, regeneration is possible, recovery ensues." Repeated assaults in this manner upon the integrity of the neuron cause gradually diminished power of recuperation, and what began as a vice becomes fixed as a disease. Either periodical spruces or steady immoderate drinking may bring on permanent changes in the structure of the neurons, impairing all mental and bodily function, will-power, "nerve" and muscular strength, and so knock out the finest specimens of brute humanity, as shown by the early decline, downfall, and premature death of many celebrated champions of the prize ring.

Knowing now what the neurons look like, the wonders they can do in health, how they wilt when abused, and recuperate when they have a chance, we get a fair idea of the physical or tissue-difference between a state of healthy nerve-tone, a functional nervous disease, and an organic one. In health the neuron is well-fed, not overworked, and has fair hours of rest; when it is abused, overworked, or under-fed, or poisoned (it would be impossible to say from which of these evils it suffers most), it becomes lean, hungry, gaunt, laggard, "soft," weak, and incapable of steady attention to business, and the possessor of such neurons becomes neurasthenic, or has functional nervous disease, manifested by symptoms of debility and irritability; but until the neurons have become utterly exhausted, degenerated, and wasted, they may be enabled to revive, and the disease be cured. When they become soft beyond repair, or hardened by another process of degeneration called sclerosis, the nervous system is the subject of an organic, incurable disease, more or less serious according to location and extent of the "lesion."

The well known disease brought on from softening is general paresis, a prostration of both mental and bodily powers, which renders the subject a candidate for some insane asylum, where most of them vegetate to the end—sometimes in a long-drawn-out period of uselessness necessitating much care. Probably the most common cause of this degenerative disease is the state of mal-nutrition of the neurons, due to blood-poisoning by syphilis, through its destructive effect on the blood-vessels.

There are several other causes which operate through the circulatory system to rob the neurons of blood-supply, and thus bring on apoplexy, and various forms of localized paralysis, affecting half the body or less. Small arteries in the brain may become so thinned or "varicose" as to burst, and others may become blocked by plugs of



clotted blood. If these obstructions can be removed by absorption before the neurons in their field of blood-supply become too far starved to death or softened, such an "organic nervous disease" may be curable.

It would hardly be possible to present in a book for popular reading the means of deciding between functional and organic nervous diseases, or between curable and incurable nervous affections, for, as we have just shown, all organic diseases are not incurable, neither are all (seemingly) functional diseases curable; but in a general way it may be said that while most of the symptoms of neurasthenia may belong to organic diseases, none of them necessarily indicate it, and the important thing for all sufferers from nervous symptoms to remember is that they must not let their neurons run so far on the down grade of malnutrition as to become softened beyond repair, and that the nearer they go to the line of degenerative change, the more difficult and tedious will be the task of restoring them to the normal state. They who would save their life must lose it—that is, the mode of life which has seemed good, but proved to be destructive—and rigorously or religiously adopt such means as strict hygienic living; avoidance of all intense excitement, worry, overwork, or idleness; moderate systematic exercise, short of the fatigue point; regular and long hours of rest; plain, nutritious fare, and plenty of it, and an appropriate course of treatment by electricity, baths, or medication that will enrich the blood, renourish and revitalize the neurons, and reorganize all vital functions on a harmonious basis. (See page 75L.)

### Paralytic Affections.

There will probably be no better opportunity or appropriate place than this to give a brief description of the most common and serious nervous diseases. General Paresis, or general paralysis of the insane, has been mentioned, and its mode of origin explained as due to a breaking down from malnutrition and exhaustion of the nerve-elements—brain-softening, as it is shortly stated and commonly expressed. It is not at all easy to judge by the symptoms in any case just when it passes from being one of mere neurasthenia to one of general paresis—*i.e.*, when the process of actual softening beyond repair has begun, when the line of degeneration is passed, beyond which there is no turning back. It is like the passing of day into night when the sun is behind the clouds. The recognized symptoms of this disease are mental failure, loss of memory and concentration of thought, flighty notions, extravagance of the imagination, false ideas of wealth, ability, and power, "crankiness," restlessness, sleeplessness, progressive weakening of muscular power and control, with irregular drunken gait, thickness of speech, and un-

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equal size of the pupils. The weakness gradually becomes utter paralysis, and the mental state degenerates to imbecility. This comes about in from one to ten years. Most of such cases, becoming well defined, are fit subjects for asylum treatment, as epileptic and maniacal attacks are apt to be occasional occurrences. Paralysis is the name applied to cases in which there is loss of power in some part, owing to loss of nervous control. There is often also a loss of sensation, or ability to feel a touch or injury of the paralyzed part. When due to apoplexy, already explained as an injury to nerve-centres resulting from a rupture of a weak blood-vessel, and the pressure of an oozed clot of blood, the paralysis is likely to affect only one side of the body, including the arm and leg of the same side, and that is called *hemiplegia*, but when the lesion or accident has occurred in the spinal cord, as from "breaking the back," or the growth of a tumor, the loss of power is in the lower half of the body and the legs, and the arms are seldom involved—this is called *paraplegia*. A sensation as of a girdle around the body often helps to locate the site of the injury in the spine. Of course the curability or prognosis in cases of paralysis depends mainly on the nature of the lesion, and what may be done to repair the damage. The apoplectic kind is most often cleared up in course of time by the absorption of the blood-clot, and the main danger to fear and provide against is the repetition of such attacks. While paralysis of this origin is truly enough a nervous disease, it is not primarily such, and the treatment needs to be directed mainly to the blood and circulatory system, since it is weak spots in the smaller arteries which are the source of danger (from rupture), and the probable cause of such erosions of the arteries is a bad quality of the blood favoring either malnutrition or a slowly corroding inflammation.

### FACIAL PARALYSIS.

Facial Paralysis occurs on one side of the face in the region of the nerve that controls its muscles, and is usually due to pressure on the nerve where it passes through a narrow, bony canal. "Catching cold" may cause a swelling along this nerve, and there would be room to accommodate it almost anywhere else, but it gets itself pinched by swelling, and then that side of the face "falls," becomes lifeless, expressionless, powerless. The eyelid cannot be closed to wink, or the mouth puckered to whistle. Most such cases clear up in a couple of months, especially if proper local and constitutional treatment be employed. It is one of the many manifestations of the rheumatic state of the blood. Locally, hot water applications, massage, and electricity are the favorite remedies, but daily hand rubbing with my Magnetic Ointment is the best local treatment I have to propose for most such cases.



## SHAKING PALSY.

Paralysis Agitans, or shaking palsy, is an affection of advanced age, in which there are occasional or constant tremors (trembling) of the hands and feet, and maybe rigidity of the muscles, impairment of walking, loss of equilibrium, and cramp-like pains. The head and neck, if free from tremors, may become rigid or fixed in a forward position. There is difficulty in talking, and maybe in swallowing. The mental state is one of restlessness and irritability, and gradual failure. It is a disease of slow progress, and the possibility of arresting it depends, of course, on the age of the patient, and the general state of bodily vigor.

## LOCOMOTOR ATAXY.

Locomotor Ataxy is a disease located in the spinal cord, an atrophy of nerve-fibres, and fatty degeneration, impairing the nerve-muscular control and sensation in the lower limbs. Its most noticeable objective symptom is the "ataxic gait," which is unsteady by jerks, with a peculiar prance or kick, but the worst subjective symptoms are the stabbing or shooting neuralgic pains. The limbs are anæsthetic—slow to sense a prick—heavy and numb. Such symptoms may later affect the arms and hands also. The eyes are liable to be "crossed," or to double vision and other disturbances. Among the early symptoms which lead us to suspect this disease are difficulty in going down-stairs, or in standing still with the eyes closed, especially on one foot. The patient does not sense the ground properly, and feels as though "walking on air." On rising to walk he hesitates a moment, to get well balanced for a start, and when well started he cannot promptly stop. Rheumatic pains, shifting, coming or going suddenly, or fixed in one spot for hours, often precede the more certain diagnostic signs. The causes are various, including exposure, fatigue, all forms of dissipation, and especially sexual excess and venereal disease (syphilitic). Excepting when the disease is due to "the bad disease," there is no specific treatment, but it can often be arrested by diligent enforcement of general measures for improving all vital functions, and providing a good, clear, and rich quality of blood, and the same may be said of all paralytic affections spoken of under the one general head.

## Epilepsy.

Epilepsy (fits, or falling sickness) is one of the most common of the serious and obstinate nervous diseases, and yet it is generally supposed to be *functional*, or, if there be some change from the normal state of the nerve-cells (neurons), it has not yet been discovered except in those cases of epilepsy directly following injury to the skull, or coverings of the brain. In an epileptic person these nerve-centres are peculiarly

"touchy," irritable, and predisposed to volcanic eruption of nervous energy, whereby the whole body is thrown into spasms, and consciousness is lost for a time. Just why these neurons are ready to "go off half-cocked" on slight provocation is not understood, but the fact is well settled that some persons "are born that way," with an unfortunate inheritance of a nervous system which may be said to be in a constant state of unstable equilibrium. This does not mean that the parent of an epileptic by heredity must have had the disease, but if one of the parents had not some marked disorder of the nervous system, then the lack of proper adaptation in marriage was such as to transmit an unstable nervous organism. Ireland, in "Mental Affections of Children," tells us that "general causes assigned to epilepsy are much the same as those for idiocy. That the malady is frequently transmitted by heredity is clearly proved by Dr. Féré." He observes that "when the marriages of epileptics have an average fecundity, scarcely one-fifth of the children are healthy. Epilepsy seems to be propagated more directly than are other neuropathic diseases. This is what is called similar heredity. Eccheverria found that out of a total of five hundred and seventy-two epileptics, thirty-nine per cent. had an hereditary taint received directly from the parents. In many cases epilepsy appears in the collateral lines, and sometimes passes over the son or daughter to affect the grandchild. Sometimes, on the other hand, the neurosis takes another form, such as idiocy, insanity, hysteria, hemicrania; or the epilepsy is combined with these affections. Perhaps as many as one-fourth of all idiots are epileptics, or have fits now and then. Drunkenness in the parents is found to be a common cause. Eccheverria found it in seventeen per cent. of his cases, but Wildermuth in less than two per cent. Excess in alcohol may originate epilepsy or bring it back after the disease seems to be cured. The craving for intoxicants may itself be an inherited disease, apt to propagate its like or some other form of neuropathy. Epilepsy is occasionally caused by injuries to the head or by cerebral tumors. Brown-Séquard has proved by experiment that guinea-pigs may be rendered epileptic by lesions of the sciatic nerve or of the spinal cord, and that this epileptic proclivity was transmitted to their descendants, and Luciani has observed the hereditary transmission of epilepsy in animals in which the disease was provoked by irritative lesions of the brain."

When the nervous system is thus susceptible to spasmodic action, it is "set off" in epileptic attacks by slight provocation, as by emotional excitement, some indigestible substance in the intestines, or a little excess of some autotoxic impurity in the blood. Dr. Brown-Séquard wrote that "Sympathetic Epilepsy is frequently due to an irritation of the sexual organs, especially brought on by masturbation. In Anglo-Saxon countries, where children are less watched and warned against the

dangers of that fatal habit than in other civilized countries, epilepsy due to that cause is particularly frequent." He showed also that in Hasse's record of a thousand epileptics, 364 of them were found to be between ten and twenty years of age. If, when the nervous system is prone to epileptic seizures the individual could be so carefully guarded through the tender period of youth as to avoid unnecessary sources of irritation, very likely when reaching adult age the propensity would have been outgrown—the dangerous period passed; but the susceptible nervous system, together with some abnormal and continuous aggravation of its infirmity, leads to the establishment of a confirmed form of epilepsy, and one that will yield only to prolonged and careful treatment.

In considering the aggravating causes of epilepsy, it is difficult to decide whether to lay the greater blame on irritations originating in the sexual organs or the digestive organs. At all ages, but especially in ungarded youth, the chance of evil from both sources is unfortunately very great. During infancy it often takes but little belly-ache to give rise to convulsions in children who do not really belong to the epileptic class, and as boys and girls are brought up to gourmandize on meats and sweets, and partake of everything set on the table, there is abundant source of irritation for their nervous systems in the almost perpetual disturbance going on in their stomachs, so that, wherever there is a tendency to epileptic disease, it is pretty sure to be stimulated into activity, either through ignorant or reckless abuse of the digestive and generative functions.

A general epileptic attack usually exhibits these symptoms: paleness, loss of consciousness, a cry, general spasms, a fall, biting of tongue and lips, congestion and redness of face, short, difficult breathing, frothing at the mouth, perspiration, relaxation of spasms, stupor, sleep, and, on waking, headache and fatigue. In the mildest cases, called *petit-mal* (little sickness), there is only a momentary lapse of consciousness, and spasm of a few muscles of the face or neck. Whether great or small, the attacks recur periodically, often with some regularity, from ten a day to one in ten years. Some such cases have premonitory or warning symptoms, in form of queer sensations, irascible temper, cold hands or feet, or some optical illusion, occurring a few hours or seconds before an attack. Epileptics generally have other evidence of poor health, and no doubt the nervous system suffers from every new attack. In time memory fails, and other mental faculties are impaired. Excitability of temper, depression of spirits, and even symptoms of insanity develop in some of these cases.

In the treatment of epilepsy little can be done during an attack except to guard the subject against self-inflicted injury. After an attack he should be turned on his side and the tongue drawn forward, so as not to obstruct breathing while he is permitted to "sleep it off."

The curative treatment demands that the general health should be attended to all round : the nerve-centres nourished, the blood made rich and pure, all sources of irritation removed, especially from the mind, the digestive and the sexual organs, and lastly, not *firstly*, as most cases are treated, a sedative compound may be used to subdue the over-excitability of the nervous system, and so stave off its explosions. The bromides, though much abused for this purpose, are still indispensable, but their utility, and especially their harmless application, requires good judgment in selection and combination, with an eye to the objects first stated in speaking of treatment. The writer has found simplicity and abstemiousness in diet, and a preference for a vegetarian bill of fare, very conducive to success, and will be pleased to give free advice to all sufferers from this annoying and inconvenient malady.

#### The Question of Functional or Organic Disease.

In contrasting functional or organic diseases we have been accustomed to think of the former as presenting no discoverable change in the actual structure of parts, while in the latter there is evident change or loss of substance ; but the latest facts in regard to the changes observed in neurons coincident with neurasthenia, which have been above described, favor the idea that there is not likely to be disordered function without some physical basis, whether we are smart enough to discover it or not. We find it difficult in all problems of life to draw hard and fast lines, and make definitions that will always stand. It is not easy in all cases to distinguish living from non-living matter, plant from animal, vital force from the other forces operating on or in matter, health from disease, or even life from death. The bounds of true functional disease are likely to be narrowed. We can easily see the changes in a lung destroyed by phthisis, and know that it is organic, while in asthma the lung-tissue may show no deviation from normal, however much the breathing may be interfered with, and, so far as the lungs are concerned, the disease may be entirely functional, but if we could find a way to see into the neurons in control of respiration, very likely we should find some change in the "operators," or in the wires by which they confer and send out their messages. This would apply as well to a large number of functional diseases of vital organs, by tracing the trouble first to the nerve-centres (neurons) that control their action, and then assuming some flaw in their relative neurons.

Having shown how these neurons are subject to abnormal conditions, and how these may develop into the most serious forms of nervous disease, the next business in hand is to show *the relationship between the disorders of the nervous system and the more common constitutional diseases* and localized chronic ailments, but to do this it is now necessary



to explain another important function of the nervous system which, up to this time, has been purposely left almost out of sight, in order to bring it out in the strongest light when most needed. It may be well introduced with a little story.

"In a case before a coroner's jury of a man killed by accident, whom, for the sake of argument, we assume to have been a rare specimen, "in perfect health," a juror asked the coroner, a German doctor whom some folks regarded as somewhat eccentric, whether the organs had been, in the post-mortem examination, found to be in a healthy state. The coroner replied: "No! the man was dead," and some who heard the story didn't know whether "the laugh was on" the coroner or the juror, but the coroner was, in fact, telling a great truth, and one which it is well to remember. Any organ, to be in a healthy state, must be operating—alive. The body of the man, and all his parts, may have been without a flaw in *structure* or substance, if he were killed by a shock from a trolley-wire, but he was dead, and, without the spark of life, the organs, being functionless, were not healthy. Health implies life and action, as well as wholeness of parts, and if one organ be "all there," but not "up to duty," there is ill-health, disorder, and disease. The great function of the nervous system, aside from its relating us to the outer world—adapting us to our environment—is its business of administering the affairs of the body itself in all its parts. It stimulates, regulates, controls, and harmonizes a great variety of processes which we call vital functions because vitally necessary to maintenance of life and health. If, because of any sleepy neurons, or break in the wires, this administration fails, there is lack of proper adjustment of the affairs of life, and proportionate illness.

Though the brain is, as already said, the capitol and referee and main storage and distributing reservoir for the supply of nerve-energy, there are many sub-treasuries and minor administrative officers scattered through the chest and abdomen in what are called the ganglia (masses) of "the sympathetic nervous system," one of the largest being the "solar plexus," situated "at the pit of the stomach," or where a man may be easily "knocked out," if you hit him "where he lives." It is well shown in Fig. 156, on page 465, and in the second colored plate, where the intimate relations of the sympathetic ganglia and the spinal cord are shown in the white cords that join them, but the most direct connection between the brain and the vital nerve-centres is by means of two pneumogastric (chest-stomach) nerves, which afford not

FIG. 234.



NEURON.

From a ganglion of the sympathetic nervous system, in its capsule, with its "processes" cut away.

only a steady flow of energizing nerve-influence to the vital organs, but exert also a controlling or restraining action, as though holding the rein over them as well as the whip. Evidently this is a great business with "a beautiful system," but the story of its far-reaching influence is not yet half told. It has only been traced as far as the vital organs themselves, for controlling their operations, even to the number of heart-beats per minute, but now we must follow the nerves along the routes of the blood-vessels in what is called "the vaso-motor system," because they regulate the size of the blood-vessels, and so the blood-supply of every part, but they go farther still, even to the elementary cell or fibre,

FIG. 235.



A CASE OF HEMIATROPHY,

Or wasting of the tissues of one side of the face,  
from nervous disease.

microscopically fine point—the ultimate elementary cell of every tissue—and finding even its nutrition dependent upon the constant galvanic current of vital nervo-electricity, the way is made easy to understand how every failure of function or wasting of substance from malnutrition may result from a fault in the administration and supply office—the nervous system—and it will be a local or general disease according to the number of neurons that wilt and become inattentive to business. Other chapters of this book have traced heart, lung, dyspeptic, and liver derangements to nerve-failure. Though written many years ago, they stand the test of scientific study as well as professional experience; but since we have come to understand the greatness of the fact of the dependence for nutrition of every bodily cell upon its supply of nerve-stimulus, what wonder that there is a disposition to bring more and

to influence its nutrition as well as its operation. It is through some disturbance of this finely adjusted patent lever regulator of our watch-works that the face blushes or pales, the mouth becomes dry, or the eyes moist from emotion; and when extreme shock occurs to headquarters, whether from physical or mental cause, it is through this endless chain of nerve-work that all blood-circulation and other business of the corporation may be brought to an end in fatal syncope.

In tracing the nerve-influence down to this



more all wasting diseases into the category of nervous diseases, and how reasonably will be herein shown.

This influence of the nervous system is called *trophic*, from a Greek root meaning to nurse or feed, and if the body-tissues cannot feed and reconstruct themselves from the blood so generously distributed within their reach, without being coaxed to do so by some nerve-influence, then that is well named trophic or mother-nurse influence. There are well-recognized nervous diseases in which some part becomes atrophied—starved out—because its neurons are fading, still fading. The best known cases, though fortunately not common, are seen in the “living skeletons,” which are cases of “wasting palsy,” or “progressive mus-

cular atrophy.” In them the gradually wasting muscles indicate that a process of atrophy has begun in the neurons of the nerve-roots of the spinal column, but this sort of wasting may be localized instead of general, and only affect one arm, or a small portion of the face in the domain of one nerve, and, knowing of such cases, the question naturally arises whether in every instance of wasting disease, even though, as in phthisis, there be an invasion of microbes to hurry along the “consumption” of tissue, the real cause may not be in a shortage of the trophic nerve-energy, which the cells need to enable them to keep well fed, and capable of warding off invaders. It is admitted that the Koch bacilli cannot take up their abode except in soil prepared for them, and now the question arises whether this acceptable soil means a particular (abnormal, of course) state of the blood, or a deficiency of trophic nerve-influence; and the probable fact is that it is generally both, since impoverished blood and deficient nerve-energy so often go together, constituting that preliminary stage of the disease in which a person is said to be “running into consumption.” It is more often a slow drifting, with symptoms of neurasthenia (showing that the neurons are getting weary of well-doing) and of scrofula, with the familiar train of symptoms usually attributed to bad blood.

FIG. 230.



CHARLES EFRAÏM, THE  
LIVING SKELETON.

### Scrofula.

Having thus stumbled upon scrofula in this relation, let us see what there is to be said of it in this connection. We have been accustomed to look upon it as essentially a blood disorder, and in earlier editions of this work it was attributed to a blood-poison whose effects were

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evident, even though the poison itself had not been discovered. The origin of the disease, not only by heredity, but by an unhealthy mode of life, was dwelt upon, such as "residence in damp localities, habitually sleeping in chambers where the sunlight seldom penetrates, daily exposure to cold, damp air, insufficient food, a pork diet, impure air, and personal uncleanness—also impure vaccination—and finally, vitiated and dissipated habits, and all influences which have a tendency to depress the vital forces, may open the doors of the system to the devil's breath and inaugurate scrofula."

Though we still know that such conditions of life render us easy victims to malign influences from without, such as malaria, it is now known that a "depressed state of the vital forces" implies sick neurons, and leads to such derangement of vital functions that poisons are self-developed—right at home, in our own bodies—and the scrofulous poison, if not always, certainly is often, of this kind. A late English writer (in Quain's "Dictionary of Medicine") says the chief characteristics of scrofula "consist, structurally, in a defect in the blood, and functionally in *languor*. It is a special form of constitutional weakness, debility, or degeneracy of mankind, manifesting itself in two ways, in a defective power of resistance to external influences and a defective power of growth and development in some or all parts of the body. Whatever lessens health and strength tends to beget scrofula, and once produced it is highly hereditary," and so commonly congenital, meaning from birth.

Scrofula, therefore, originates in self-blood-poisoning, debility and malnutrition, and as we have found the trophic neurons to be in control of all this important business, we trace the "*languor*" to them, and so find scrofula not out of place in a consideration of nervous as well as blood diseases. Its hereditary transmission also goes to confirm this view.

Dr. Benjamin Ward Richardson, one of England's most fertile and popular medical writers, says that "In cases of hereditary disease the impression which has been made on the affected person, and which is transmitted to the offspring, is inflicted *primarily upon the nervous centres*. This view is contrary to the common belief which fixes the taint in the blood, and which is expressed in such every-day terms as 'bad blood, good blood, ancestral blood,' terms which are applied as freely to *mental* as to physical proclivities. The view which assigns the seat of the taint to the nervous matter (neurons) rather than to the circulating blood is most in accord with modern observation. \* \* \* Moreover, we learned by direct experiment that physical nerve-injuries inflicted on parents are transmitted to offspring. Epilepsy induced by nervous injury has been thus transmitted. \* \* \* It is observable that the injuries to nervous matter which are capable of producing hereditary

diseases must be inflicted either on a nervous centre or on a trunk of a nerve. Injuries inflicted on the extremities of nerves do not seem to be followed by changes transmissible by heredity. \* \* \* It is not until the *nutrition of a part directed by central nervous control is perverted* by a central injury that the inherited mischief is established. \* \* \*

Whether something material and active is passed on from one generation to another, or whether it is a purely physical impression *or vibration* which is transmitted, we cannot pretend to say." My preference is for the theory that normal nerve-action (life itself) is a mode of motion (vibration), and that the several "taints" or hereditary diseases are abnormal modes of motion, resident in the neurons (central nervous matter), and transmissible as unpleasant memories to offspring. The initial impulse thus implanted in the germ decides in the main how it shall grow, develop, and act—in short, what kind of life it will live and how long.

Dr. Richardson says the "view is now gaining ground that the scrofulous taint is a variety of the syphilitic." This book always maintained their close relationship and their resemblance in physical effects. Previous editions said: "Syphilis is own cousin of scrofula." The syphilitic taint is recognized as the most intense and far-reaching of any of the hereditary "diatheses," though syphilis in its more virulent or active form is acquired by direct inoculation; but however acquired, while it is liable to invade, mar, or destroy every tissue or organ, the deepest impression is made on the nervous system, which fact is entirely consistent with its power of hereditary transmission even to the third and fourth generation. In the first generation, as in the victim of acquired syphilis, it may be responsible for epilepsy, chorea, locomotor ataxy, paralysis, and an almost endless variety of degenerative changes in the bones, skin, and mucous membranes; but as its power wanes in further generations the results are symptoms such as are commonly called "scrofulous," of which there are twenty or more.

#### SYMPTOMS AND TREATMENT OF SCROFULA.

Among the more common symptoms of scrofula are enlarged glands, especially in the neck, catarrh of any mucous membrane, bronchitis, consumption, ulceration of the bowels, many varieties of skin eruptions, chronic abscesses, which, if they form in the bones of the spine, lead to Pott's Disease, humpback, rickets, hip-joint disease, tumors, notched teeth, hydrocephalus, ophthalmia, blindness, ulceration of the ears and deafness, and yet the whole truth is not told, and space cannot be spared for it. When children early display signs of a scrofulous tendency everything favorable to its relief should be religiously employed, for it is through neglect that we see the many sad deformities that result from early caries (decay) of the bones, or the rickety

soft state which leads to bow-legs. Rickets in children may be suspected when there is much tendency to diarrhoea, fever, thirst, perspiration, swelling of the knees, wrists, and ankles and poor teeth.

The early symptoms of Pott's disease (of the bones of the spine) are pain on motion of certain parts, with a disposition to keep the body fixed while stooping, and pain on pressure over some point of the spinal column, often noticeable soon after a fall, blow or wrench, and, though constitutional treatment must not be neglected, the first effort should be to give the inflamed part rest by means of a suitable apparatus for support, which will permit the child to go out in the sunshine and air. Many cases of mere curvature of the spine imply no disease of the bones, but merely a bad habit of position in sitting, sleeping, or working, and are better treated without apparatus than with, the patient being made to brace up and strengthen his or her own muscles by suitable exercises.

While my views in regard to the nature of scrofula have advanced rather than changed, I see no occasion to modify what I have always advised and found satisfactory as to treatment—consisting in the main of all those hygienic means explained at length in the chapters relating to causes and prevention of chronic diseases, together with vegetable alterative medication selected according to temperament and symptoms with a view to eliminating the scrofulous poison, enriching the blood, and thus renourishing and revitalizing the neurons. Particular attention is invited to Chapter XII., Part II.

One of the worst cases of Pott's disease that ever came under my treatment was that of an otherwise promising young woman of about twenty years of age, who had reached the stage of lateral double curvature of the spine, and inability to maintain an upright position of the upper part of the body, without iron crutches under the arms, having their ends supported in pockets in a heavy leathern belt securely fastened about the body, just above the hips. Having worn this supporting harness for several years, she finally became a constant sufferer from severe bladder troubles, causing incontinence of urine. She came for relief from the latter, not dreaming of the possibility of a cure of the spinal curvature. It was apparent that so long as she was obliged to wear the harness, she would continue, from the pressure upon the parts below the belt, to suffer from an annoying urinary affection. I undertook the seemingly hopeless task of curing the Pott's disease, and at the end of about one year's treatment I had the satisfaction of discharging the case with a spine that could support itself and complete relief from the affection of the bladder! The heretofore hopeless young woman had come to possess backbone, and was able to join her comrades in their sports and social events as well and as joyous as any of them. This remarkable restoration was accomplished by simply alterative treat-



ment for both nerves and blood. The scrofulous condition of her blood had doubtless been inherited, in consequence of which she was being punished for some ancestral errors. Whether inherited or a result of some pernicious habits on the part of the invalid, the treatment must be constitutional, and not simply local. It is said that charity will cover a multitude of sins, but it will not atone for them, and when the human body exhibits the effects of sins of omission, or commission, due to those who have gone before, or committed by the present sufferer, the only effectual atonement is to sin no more, and apply all possible regenerative means that will restore the integrity of the blood and neurons and their ability to evolve, store, and distribute the vital forces.

We have traced the possibilities of disease resulting from weak and weary neurons far enough already to see that when the nerve-energies are debilitated, the vital functions sluggish or disordered and the blood impoverished or impure, the subject of such tendencies "has a right," as our Hibernian friend would say, to take on or run into almost any form of chronic disease, but which of them will develop, what part be chosen for the seat of the disease, or what "taint" become established as the habit and display its trade-marks on its "subject" will depend on various influences of which we know something but not all. Heredity, temperament, habits, environment, and even some accident will all help to decide whether the taint shall be mainly scrofulous, tuberculous, syphilitic, gouty, cancerous, or mixed. It may tend one way in one generation and another in the next, and be aggravated or mitigated by various combinations in marriage.

#### Aches and Pains.

There are several taints so closely allied in origin and nature that they may well be spoken of in a lump before describing each in detail. All have pain for their main symptom, due to the irritation of sensitive nerves by blood impurities. The blood is such a complex fluid that there are many ways in which it may become off-color, tainted, or impure, but one of the most common faults is retention of waste matter, such as urea, uric acid, and their compounds. In health these substances are being cast into and out of the blood daily. The arteries are the supply-pipes of the fresh blood which builds up the tissues, and the veins are the sewage pipes of the vascular system, whose office it is to gather up all that is effete and carry it to the organs which are capable of disposing of it. Only the sluggishness of the output through the skin, kidneys, liver, and intestines, may result in gradual accumulation until the blood becomes tainted or poisoned beyond the limits of well-being and comfort. Then some part suffers, and pain is its cry. Wherever there is pain it is because some tender nerve-filament is being

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pinched. If the blood impurity causes inflammation and swelling of the nerve alone then neuralgia is the name given, or it may be sciatica when the great sciatic nerve at the back of the hip and thigh is hit. If the muscle or joint becomes inflamed, it is called rheumatism or gout, but the local signs of heat, swelling, redness, and pain are the same, and the blood poisons are quite alike, whether the pain be neuralgia, headache, rheumatism, or gout. Physicians call these "neuro-humeral-diatheses," or nerve-blood taints, and though there is chance for debate as to the chemistry of the poisons, there is general agreement that relief can only come through cleansing the blood, and regulating all vital and eliminative functions, so that no more such poisons shall be excessively produced or retained in the system. These painful affections do not come upon fairly healthy people, but upon those with defective neurons and blood-corpuscles through trouble, excessive brain-work, exposure, malaria, or unhygienic practices, and the chronic forms of main interest here take hold of the neurasthenic, anæmic, dyspeptic, run-down, played out or used up folks, who have been neglecting very slight ailments until the blood has accumulated impurities to an inflammatory point, and when fire breaks out somewhere an acute pain gives the alarm. The gouty diathesis is common to our robust neighbors, or those seemingly so, who have overfed themselves, and who look pretty hearty and strong; but from a physician's point of view, they are not as healthy as they look. Their flesh and blood is not really good stuff; their vital organs have been overtaxed, and they are always on the verge of an inflammatory attack from insufficient action of the skin, liver, bowels, or kidneys. One really cannot be too robust, but he may be too plethoric, too full, too fat, or possessed of too thick blood, and perhaps added to this, too generous in his diet.

### NERVOUS HEADACHE.

Most headaches are due directly to blood impurities, from liver or kidney torpor, or indirectly to reflex irritation from congestion of the stomach, or sexual organs, but there are cases in which the difficulty arises purely from nervous disturbances. Incipient neuralgia may present all the symptoms of nervous headache. The affection of the nerves not having proceeded far enough to induce irritation or inflammation sufficient to cause distinct neuralgic pains, the sensations are those which are best described by the term *ache*. Overworked brain may induce nervous headache, or establish a predisposition to its attacks. The nerves as well as the muscles may be overstrained by over-exercise, and in such cases they will cry out, and their voice will be an ache or a pain. The brain actually swells in some cases from over-exercise. I have had for patients authors and professional men and women, whose main difficulty might with propriety be called



*swelled brain.* Overwork of any particular part or organ of the body may bring about inflammation and congestion, and consequently enlargement. The brain is not an exception to this rule, and when it is thus affected, the bony frame-work called the skull, will not allow much expansion of its contents, in consequence of which a sense of great pressure and aching will be experienced, together with labored pulsation of its arteries. This sense of pressure is more often experienced in the top of the head than elsewhere, but sometimes there seems to be a sense of pressure throughout the brain.

People not subject to neuralgia, or given to excessive mental labor, may in some instances be predisposed to nervous headache. Grief, disappointment, and other excessive mental emotions may occasion it; too much use of the eyes may induce it; when the optic nerve is weak or irritable, sunlight or gaslight may bring on an attack; if the auditory or hearing nerves are much affected, disagreeable noises may cause nervous headache; an affection of the spine may predispose a person to it; morbid conditions of the procreative organs of both sexes are liable to disorder the brain and develop a tendency to headache; and, lastly, it may be caused by a bad circulation of the nervous forces, or a deficiency of them. In the latter case when nervous vitality is low, the brain lacks strength and becomes tired by the slightest care, or the most ordinary thinking, just as the limbs, when weak, may become so tired by a little walking as to ache like toothache when the person so affected sits or lies down after exercise.

#### CONGESTIVE HEADACHE.

This kind of headache is most liable to affect people who are fleshy and full-blooded. The arteries and veins of those who are so fat that their skins are stuffed to their fullest capacity of expansion, are often so crowded as to circulate the blood very sluggishly, and in such cases the head is liable to ache from the presence of too much sluggishly moving blood. When a person thus affected stoops over, the head swims on assuming an upright position; and when headache is constantly present, there is experienced a sense of fulness; a predisposition to vertigo; and, in some cases, throbbing in the temples and over the eyes. People thus affected should pursue a course of medication calculated to thin the blood; and adopt a system of dietetics and exercise calculated to reduce the plethora.

In lean persons, congestive headache is sometimes a troublesome companion, proceeding from imperfect circulation. In these cases, while the extremities are cold, and the arteries and veins in them almost collapsed by the absence of the vascular fluids, the brain is unduly supplied and pressed with blood. A good remedy for this is given in the essay for keeping the feet warm, in the chapter on the prevention

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of disease. Anything that will restore warmth to the feet and a normal temperature to the head will give present relief.

Women are sometimes victims of periodical attacks of congestive headache when they are subject to menstrual derangements. The blood, instead of flowing off at the proper period, determines to the head and face, giving to the latter a flushed or florid appearance, and to the former a sense of pressure which often amounts to severe headache. Women are especially liable to these attacks, when the function, generally known by the name of the "monthly flow," is just about being established; and when that period arrives in older womanhood, commonly called "change of life;" but there are those who suffer at every recurrence of the menses, with flushed face and congestive head-

FIG. 27.



FACIAL NERVES.

ache. The only remedial plan is, of course, to give such medical attention to the nervous system, blood, ovaries and womb, and to the extremities if cold, as will eradicate the causes. It is hardly necessary to say that menstrual difficulties proceed from disease, and are natural to no one. In women of health the flow will come on with little or no warning in the way of pain, and at the age for it to cease it will simply fail to appear, with no symptom whatever of discomfort. The treatment would vary little from that recommended for Nervous Headache.

### NEURALGIA.

Neuralgia is a disease of the nerves and blood, and may affect any part of the nervous system, although it most commonly attacks the nerves of the face, jaws, breast, and side. Its presence is announced by the most piercing, darting pains, recurring in paroxysms, followed with brief intervals of relief; but hardly a moment elapses after a lacerating pain darts along the course of the affected nerve, ere another shoots forth, inflicting pain equally distressing to the patient.

The above cut presents, in the prominent black lines, the nerves of the fifth branch, which are most liable to attacks of neuralgia. Many a victim to the distressing disease will be able to recognize in those lines the tracks of the pains which so often afflict them. Neuralgia may also occur in the course of other nerves. It often strikes along those between the ribs, and is then called intercostal. It may be mis-

taken for pains in the heart or lungs; it is in fact about them, but not in or of them. But neuralgia of the heart or lungs is not uncommon; it may also attack the organs below the diaphragm, and is intensely painful when it strikes the ovaries or testes. Neuralgia in the teeth does not always mean that they are decayed and must come out. Many a good tooth has thus been sacrificed unnecessarily, when the proper thing to pull out was the impurity of the blood that was nagging the nerves at the roots of the teeth. The victim may often feel as though he wanted to tear out a neuralgic part, but that would only result in its going for some other sensitive part.

The pathology of this disease is about as little understood by the medical profession as the science of aerial navigation. As well might a person look into patent-medicine almanacs, Robinson Crusoe, or the yellow-covered literature of the day for a correct explanation of the nature of the disease, as into the pages of medical publications. Medical authors generally attribute its cause to nervous debility. What is nervous debility? Why, it is simply a relaxed and enfeebled condition of the system resulting from an insufficient supply of nervous vitality. Persons so affected are troubled with lack of strength and want of vivacity or animation. Now every one knows that neuralgia is often found among persons of robust appearance, who have a fair degree of strength, and that it sometimes manifests itself in those possessing extraordinary muscular power and physical vigor. How can this fact be accounted for, if nervous debility be the cause?

Now, then, let us take a *common sense* view of the disease. An impure condition of the blood, or the presence in the system of some poisonous mineral, like mercury or lead, may cause inflammation in any nerve which the impurity or mineral may attack, and when the nerve is attacked by either, so that there is danger of the nervous communication being blocked up, the available nervous forces are gathered up and suddenly precipitated at intervals upon the obstructed nerve by the efforts of Nature to keep the communication open. These violent propulsions of the nervous forces through the inflamed nerve, cause the sharp darting pains. Nature always attempts to get rid of any functional intruder. This is illustrated when something gets in the eye; a sudden gush of liquid from the tear-glands attempts to carry it out. If something offensive to the olfactory nerves, or anything not suitable to breathe into the lungs, enters the nose, an involuntary sneeze takes place for its removal, or, at least, to prevent its entering the pulmonary organs. If the stomach is crammed with a mixture of unwholesome food, Nature often visits upon the careless gormandizer an attack of vomiting or diarrhoea to carry it off. If corrosive or acrimonious secretions of the bronchial tubes roll down toward the air-vessels of the lungs, a cough involuntarily takes place to bring them up.

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Now, all these efforts of Nature to effect relief may sometimes not only prove unavailing, but go too far, unless remedies are resorted to for the removal of the intrusion which she has faithfully tried to dispose of. The tears may flow too copiously or too continuously ; the sneezing may become convulsive and painful ; the vomiting or diarrhoea may become excessive, continuous, and debilitating ; and the cough may become rasping, exhaustive, and alarming. So with the precipitation of the nervous forces on the nerves attacked by unwholesome humors or mineral poisons, which threaten to cut off communication through those nerves ; it may become too painful, too continuous, and even threatening, unless remedies are adopted to assist Nature in getting rid of the offensive visitors ; but that natural effort, that sharp-shooting of the nervous forces through the invaded and inflamed nerves for the expulsion of the invaders, that, I say, is neuralgia. Neuralgia is a regular pitched battle between the forces circulating through the nerves and the offensive humors or minerals which attempt to obstruct their pathway, and when they are defeated, paralysis of the parts follows, for the nerves of sensation, or motion, or both, become lifeless when the passage of animal electrical currents is completely obstructed. Sometimes the warfare will be kept up for years, at intervals, unless something sensible is done to assist Nature.

### THE TREATMENT OF NEURALGIA.

The assistance needed is readily suggested by a proper understanding of the disease as herein explained. If blood impurities are attacking the nerves, remedies suitable to cleanse and nourish the vascular fluid must be taken by the patient at the same time electricity is being locally applied to relieve the painful paroxysms and the inflammation which has taken place in the affected nerve. If mineral poisons are lurking in the system and permeate the delicate nervous structure, these must be entirely eliminated. The advances made in vegetable medication and electrical therapeutics have placed neuralgia in the list of curable diseases, notwithstanding the bigoted carpings of old fogies in the profession, many of whom, even at this late day, deny its curability ; and why ? Simply because they have not been able, with their obtuse comprehension, to see into underlying causes of the malady, nor the wisdom to resort to the newer remedies of the botanical practice with its valuable alteratives.

Probably the most common error in the treatment of neuralgia is the resort to sedatives and narcotics to subdue the pain, the sufferer being content with the relief which can thus be obtained, and doing nothing for a radical cure. Many a case of opium or alcohol habit is thus induced and confirmed. Another risky mode of obtaining temporary relief is by headache powders that sometimes kill the pains, and



now and then kill the patient. Local stimulant pain-killers, such as lotions or menthol pencils, are far safer for self-prescription, and one of the safest as well as best local applications is a hot-water bag or hot brick in flannel wrapper. For sciatica, try a hot flat-iron applied over enough flannel to warm through the muscles without burning the skin. I would refer those suffering with neuralgia to page 342.

## RHEUMATISM.

The theory of this disease has never been correctly explained by anyone. In fact there is not even a show of plausibility in any of the written views of medical writers respecting its cause. As sensible a description of this painful affection as any that has fallen under my

FIG. 238.



RHEUMATISM.

eye, was given some time ago in *All the Year Round*. The writer says: "Put your toe in a vice; turn the screw until you can bear the pain no longer; that is rheumatism. Give the screw one more turn--that is gout." When this book was first written, I, too, misled by popular errors, gave a very imperfect idea of the real nature of the disease, but my experience and success in treating it have, I am confident, suggested to my mind the correct pathology. In later editions I felt constrained to substitute a new essay for the old one, and in submitting it to my intelligent readers, I feel confident it will be accepted as rational and sensible.

It must be understood by the reader that the arterial blood contains the elements of vitality and nutrition, which it empties into what is called the capillary system. This capillary system is a kind of filter of the blood, and after the nutritious particles have been filtered from the arterial fluid the latter is sucked up by the minute branches of the venous system, and carried back to the lungs for vital recuperation. Then the atoms of nutrition, composed of fluid bone, fluid muscle, etc., move by the laws of affinity to the various parts they are adapted to build up. Now, it so happens that through the effects of bad habits, bad medication, etc., this stream of blood emptied into and diffused through the capillary system is not always pure or free from inflamma-

tory particles. There are corrupt and corrosive adulterations. What becomes of them? They, too, are emptied into the capillaries and are sucked up with the venous blood into the veins, so that they continue in the circulation, or else pass off with the insensible perspiration outwardly, or with the waste matter of the system inwardly. But the coagulation of several of these corrupt particles is apt to take place whenever the pores of the skin are closed by exposure to wet or cold or other causes, or the internal drainage and sewerage are inactive. These coagulated particles of corrupt matter may make their appearance under the skin, producing pustules, scaly eruptions, or running sores. They may attack the skin called the mucous membrane, lining the throat, bronchia, stomach, and other cavities. They may locate about a nerve and induce neuralgia, as explained in the preceding essay, and—now we come to it—they may attach themselves to the arterial tubes and veins, large or small, and inflame them by their corrosive influence. Mercury often forms a part of these coagulated particles of acrimonious matter, and any other injurious mineral may do so. The lodgement of these and the inflammation they induce, render the channels of the blood sensitive, and the circulation of the vital current through these affected parts becomes painful, just as it is painful to drink when the throat is sore; to pass the fæces when the rectum is affected with piles; to pass the urine when the urethra is inflamed or otherwise diseased. What does Nature do now? She sends blood in abundance to drench out or dislodge, if possible, these corrosive particles, and the parts become very red from the congestion or pressure of the blood therein. This is called acute rheumatism. What if Nature does not succeed in washing out these acrimonious atoms? She withdraws the undue supply of the blood from the parts, gives up the contest, and continues to perform the function of circulation as best she can, but the passage of the currents of blood through their affected channels still continues painful. This is called chronic rheumatism. When the seat of the affection changes in a single day, night, or hour, as it often does, then it is that these corrosive quicksands have been washed from one position to another. By a sudden dislodgement they may be carried by the circulation to some part far distant from the place they previously annoyed. Now, who will say that here is not, in a few words, the whole philosophy of that painful disease called rheumatism?

#### TREATMENT OF RHEUMATISM.

As my successful treatment of the disease suggested the theory, the theory in turn points to the correct treatment. Anything which will dislodge the corrupt particles, *dissolve* and expel them from the system, and purify the blood, will give permanent relief. Vegetable medication, made up according to some of our latest botanical formulas



and suited to the idiosyncrasy of the patient, may alone accomplish these results. If not, then electricity may be employed successfully as an adjunct. See page 829. Many think they are cured when the coagulated particles are dissolved and dispersed. But such cures are never permanent. They must be expelled and the blood restored, or the corrosive particles will reunite whenever a sudden change in the weather or exposure to dampness closes again the pores or other avenues through which they escape; for so long as the blood remains impure, so long will the circulation, the insensible perspiration, the faeces and urine be loaded with those which daily accumulate.

A careful regard to air, exercise, and diet, should be observed by the sufferer with chronic rheumatism. A dry atmosphere is of the utmost importance, and dry stove-heat is far preferable to the damp atmosphere out of doors on a rainy day. In dry weather, out-of-door exercise is exceedingly beneficial, and if the invalid is so badly affected as to preclude the possibility of walking, carriage-riding should be resorted to. The diet should be regulated according to the general condition of the patient, the digestive capacities, and the stage of the disease. In plethoric persons of so-called "full habit," plenty of red blood and tendency to be fleshy, a diet of fruits, grains, and especially succulent (watery) vegetables is preferable, and such diet is generally advisable where the digestion is pretty good, and the rheumatism affects the muscles, or mainly the smaller joints, as in rheumatic gout. In chronic cases, where the tendency is to poor nutrition, anæmia, pale lips, leanness, and general debility, a meat diet may be the best, and more especially when vegetables are likely to cause sour stomach. As all rheumatism is more or less allied to disorders of digestion and assimilation, the peculiarities of each case should be carefully observed with a view of selecting a simple, nutritious diet that shall best agree with the stomach, and in many acute cases the duration of the disease can often be shortened by great abstinence—the starving-out plan. The free drinking of pure water is a safe recommendation as steady diet for all cases, and sometimes alkaline mineral waters for a while.

Much might be said of the unhealthful conditions that favor the production and accumulation in the blood of irritating poisons which, according to their kind or quality, may be the cause of rheumatism, neuralgia, headaches, and so forth, but this would require a long chapter in itself, explaining the operations of the vital organs in health, and their perverted action in disease. This may be found in a pamphlet by Dr. E. B. Foote, Jr., on "Auto-toxæmia" (see page 1248), which explains the method of self-blood-poisoning by which a great variety of blood impurities become developed through disorder of the digestive and eliminative organs. The attention of the reader is also directed to Chapter XII.

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### GOUT.

Much that has been written in explanation of rheumatism might with little qualification be repeated concerning gout. There is no doubt a chemical difference in the impurities, and, for some undiscovered reason, those of gout have an affinity for the smaller joints; but the large range of their action would be lost sight of were we to look only to the joints for the evidences of gouty inflammation. Many skin diseases are undoubtedly based upon the gouty diathesis, and some cases of asthma are traced to it. Many a throat trouble is the sign of its occasional preference for a tonsil rather than a tender joint, and an attack of piles may be its way of showing that it is no respecter of places or persons. Indeed, gout is almost ubiquitous, and goes here and there "as the wind bloweth where it listeth." It tickleth the skin or scalp with a scattering itchiness; it grips the throat; inflames the eyes; twinges the heart-strings; grips the intestines with colic; bites the urinary organs; bores through the finger or toe joints in a come-and-go-as-you-please style. Dr. Fothergill wrote a book about "Gout in its Protean Forms," calling especial attention to its nervous manifestations which are quite like those of neurasthenia. "Blues" may be one of its modes of expressing itself through the nervous system; and nervous irritability another. The gouty subject may sometimes be sleepless and at other times drowsy and sleep every day; or, he may have drowsiness with inability to sleep.

Typical acute gout is of course an intensely painful attack in the joints of the knees, feet, wrists, or hands, lasting several days; but one may get a great variety of symptoms, occasionally, or some phase of the gouty state pretty steadily without ever being laid up with a gouty attack. It is naturally the neglected chronic state of goutiness which paves the way for a sudden acute attack, if some such cause as a cold or severe indigestion occurs to inflame the blood suddenly with an unusual amount of gouty impurities; and so the gouty person who ignores its minor penalties is taking the risk of suffering its major ones. There is a more subtle danger in permitting gouty irritants to lurk about the blood indefinitely, and that is their propensity to eat away on the lining of the blood-vessels, the heart, and the kidneys until those organs suffer some irreparable damage. Therefore anyone who discovers in himself a predisposition to gouty symptoms, should endeavor to so order his life and habits as to hold them off, and if it be a strong hereditary propensity, eternal vigilance will be the price he must pay for liberty from its varying depredations.

### THE TREATMENT OF GOUT.

The treatment of gout consists mainly in attention to dietetics and exercise. It is attributed largely to suboxygenation, or an insufficient

supply of oxygen to burn up the clinkers. Food is fuel; waste matter is ash; an abnormal or obstructive waste may be called clinkers. Plenty of air-blast in the lungs aids to burn up clinkers. Exercise, joy, and laughter, stimulate deep and frequent inspirations of air-carrying oxygen. Sedentary occupations, worry, and grief, and depressing mental emotions favor lessened action of the lungs, shortage of oxygen, deficient fuel change. Over-eating, especially of meats, sweets, and fats, crowds the body furnaces with more fuel than can be digested, burned up, oxygenated, and ashified for elimination. Hence, again, clinkers to obstruct, irritate, and inflame somewhere. Strike a good balance in your food and exercise; remember that air is one food you are not likely to get too much of, and that exercise as well as eating may be overdone. You have the principles by which to hold off gout as well as other debilitating diatheses, or teasing taints. Another food that, like air, is seldom taken in excess, is water—pure water. It aids the perpetual flow of the fluids of the body. It favors activity, motion, solution, and evacuation. Every drop going out by the breath of the lungs; from the skin, bowels, or kidneys, carries with it some burden of waste matter, and what goes in must come out. Read what is said of water in Part I. The medicinal treatment of gout consists in the proper administration of such remedies as may be indicated for the improvement of digestion, the arrest of fermentation and restoration of sufficient activity of liver, bowels, and kidneys. Whatever fault in constitution, or acquired physical conditions favoring its manifestation, must receive the attention of the patient if he is treating his own case, or the physician who has charge of it. It may well be added that the very best medicines for such a trouble must come from the fields and woodlands. Botanical treatment is especially suited to a gouty diathesis. See page 312.

### Cancer.

The last disease of uncertain origin to be claimed in the list of diseases of malnutrition through perverted nerve-action is cancer, and the claim is plausible, as will be soon shown; but first let it be said that cancer as yet appears to consist of nothing but the body's own cells gone wrong, and there is no proof of the presence of any parasitic or microbic invaders. As Professor Virchow says: "The cellular elements of a tumor are derived from the pre-existing cells of the body," which for some cause have reverted to a rudimentary or simple state of life and begun to increase and multiply regardless of other parts, as though their neuron guardians had lost all control of them. It is a sort of war among our tissue elements, in which one kind proceeds to run wild at the expense of the rest.

It has seemed very reasonable to suppose that such abnormal growth was stimulated by some impurity of the blood, and it has even been suggested that cancerous tumors were evolved as a new excretory organ to rid the system of some poisonous property; but now there are many studious observers who believe that the various forms of tumors are but the results of some failure of the trophic nerves whose duty it is to regulate nutrition and cell growth; and this view is encouraged by the fact that cancer increases in frequency as age advances, and as vital power declines, that mental and nervous depression are predisposing causes; and, finally, the fact that it is most prevalent and increasing in conditions of high-pressure civilization involving nerve-strain, tiredness, and exhaustion. Senility of tissue predisposes to cancer, so that where causes of early death are reduced more enfeebled aging folks are left as probable victims for the cancerous mode of death. Dr. Herbert Snow, of the London Cancer Hospital, believes mental worry to be one of the chief exciting causes of cancer, and, from what we have known of the personal experiences of many cancer patients, I think he is right. Mental disturbances of any kind are liable to put the system in a receptive condition capable of taking on any malady to which it has even a slight predisposition.

*The Literary Digest* tells us that the theory is advanced by Dr. W. B. Clarke, of Indianapolis, Ind., in a paper read before the State Society of Homeopathic Physicians that "the recent increase in the spread of cancer is directly due to vaccination." Starting with the fact that cancer is a disease characterized by rapid growth of abnormal cell-structure, he says: "It takes twenty-one years or more to make a man, and from three or four to make a cow. As cancer is a disease characterized by the rapid imposition of cells, I ask you, is it safe to put the rapid-growing cells or protoplasm of a diseased animal into the slow-growing cells of man, as is done in vaccination? Dr. Clarke believes," continues the *Digest*, "that we are reaping the harvest of the seed so generally introduced forty to sixty years ago," and that "deaths from cancer are more numerous in England and Prussia, simply because the pernicious practice [of vaccination for smallpox] was generally introduced so much earlier there."

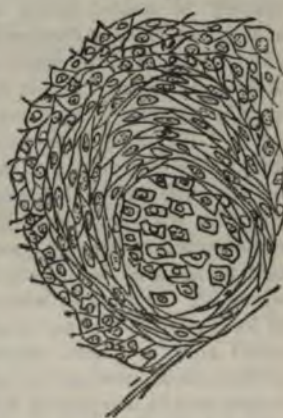
Another cause for the increase of cancer, according to Dr. W. Roger Williams, as given in the London *Lancet*, is high feeding. He says: "There can be no doubt that the greed for food manifested by modern communities is altogether out of proportion to their present requirements. Many indications point to the gluttonous consumption of meat, which is such a characteristic feature of this age, as likely to be especially harmful in this respect. Statistics show that the consumption of meat has for many years been increasing by leaps and bounds, till it now has reached the amazing total of 131 pounds per head per

year, which is more than double what it was half a century ago, when the conditions of life were more compatible with high feeding. When excessive quantities of such highly stimulating forms of nutriment are ingested by persons whose cellular metabolism is defective, it seems probable that there may thus be excited in those parts of the body where vital processes are still active such excessive and disorderly cellular proliferation as may eventuate in cancer. No doubt other factors coöperate, and among these I should be especially inclined to name deficient exercise and probably also deficiency in fresh vegetable food."

#### THE TREATMENT OF CANCER.

Cancers are hard or soft according to whether they are built up of fibrous or soft cellular tissue, and they differ, too, in rapidity of growth. The evil a cancer may do depends largely on where it is located, how early it can be discovered, and the possibility of eradicating it. All tumors are not cancers. Some are called "benign," because comparatively slow and harmless, as fatty tumors and wens, but true cancers are "malignant," rapid, ugly, and tend to reappear after removal. It is not always possible, even when a clipping from a tumor can be taken and examined microscopically, to say "for certain" whether it is benign or malignant, and so operative means (knife or plaster) get credit for curing more cancers than they really do; but generally a microscopic examination will decide, and whatever the nature of the growth, if removal be possible it may be good policy in some advanced cases to take it out with either knife or plaster. Whether by the former or the latter must be decided by the nature and location of the tumor, and sometimes the subject may decide for himself, there being little preference. The "painless" claim of the plaster plan is generally a delusion and a snare, and with anæsthetic surgery the cutting operation really causes far less suffering; but whatever local treatment be adopted it is most important to resort at once to constitutional measures that will fortify the tissues generally against the progress of this degenerative change, and hold the unruly members (cells that have revolted) in subjection, otherwise they are prone to spread through the lymphatic channels to

FIG. 220.



A NEST OF CANCER CELLS.

These were taken from the tumor in General Grant's throat.

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glands in other parts of the body, and start other tumors of the same sort—branch offices. These tumors all enlarge by "cell infiltration," multiplication of cells in all directions, as a vine grows through a tree, until they exhaust their source of supplies by getting too far from blood-vessels and then ulceration begins—a "break-down" and sloughing. If permitted to go so far the blood itself becomes contaminated with absorbed poisons which stain the "complexion" all over to a peculiar yellow hue—the stage of "cancerous cachexia."

My experience would lead me to strongly advise the medical treatment *first*, as the reader might well conclude by what has just been stated. If there be no urgent necessity for immediate heroic treatment, it is undoubtedly the safest and best plan. The medical treatment will certainly be needed before or immediately after to clear the system from the cancer-cells floating in the circulation, and that being the case, why not have it at the outset, and thereby possibly avoid the surgical method altogether? Some remarkable cases wherein I have effected cures by systemic treatment, I am firm in the belief were true cancer, and such they were pronounced to be by eminent surgeons. There can be no doubt, however, that there are many tumors so much like cancer as to be mistaken for that dread disease by careful diagnosticians, and that they are often cured by skilful vegetable medication. I have myself cured many such cases when other physicians besides myself have pronounced the tumors cancerous, whether we were mistaken or otherwise. In all cases where a supposed cancerous tumor is removed by local treatment of any kind, whether by a cancer plaster or the surgeon's knife, as I have before remarked, the constitutional treatment of the patient must not be neglected, for if it is, just such tumors are almost sure to reappear to take the place of those which have been removed either in the same or some other location.

I might mention some instances wherein I have been called upon to medically treat cases by recommendation of reputable surgeons, to prepare them for the removal of an apparently malignant tumor by the knife, their anæmic condition being such as to render immediate operation risky; and the preparatory medical treatment effected a radical cure! When the well-known surgeon, Dr. Van Buren, of New York, was living and practicing his specialty, a lady came from Northern Vermont to have a huge and malignant looking tumor removed, involving the entire mammary gland of one of the breasts. The surgeon found her in such a reduced condition that he advised her to place herself under the care of some physician in whom she had confidence, and take a course of medicine that would improve the condition of her nerves, blood, and digestion, so that she might safely undergo the contemplated operation. It so happened that she came to me, and when I told her that if she were to use my medicines faith-



fully, operation might not be necessary, she excitedly responded: "Don't say such a thing to my husband, or he will think you are a quack." I then took the case ostensibly to prepare it for the supposed inevitable operation. But the surgeon never had the opportunity, for in less than a year's time the medicine accomplished the entire removal of the tumor, and my patient had no further trouble from it. In this instance the surgeons who examined it pronounced the tumor a cancer.

I am often asked if tomatoes cause cancer. Dr. Andrew Wilson, of London, has been quoted as saying that he is tired of answering that oft-repeated question. Probably any physician of extensive practice is. How such an idea ever got into the heads of the people, it is hard to surmise. Perhaps it was because that healthful vegetable with its rapid growth, corrugated surface, and deep red color reminded one of a cancerous growth. Dr. Wilson's reply will doubtless be endorsed by most medical men who may happen to see it. He answered as follows: "But for the fact that one takes a pleasure in stamping one's foot on a misleading statement calculated to prejudice people against a vegetable food which is entirely healthful and safe, I should grow weary of asserting that not a jot or tittle of proof has ever been offered in support of the outrageous statement. One might as well allege that cabbage causes cancer, for there would be no more proof to be had concerning the tomato myth. I can only repeat that the tomato is an excellent vegetable enough, and may be partaken of by those with whom it agrees without any fear of it initiating any disease whatever." It is evident, if what Dr. Roger Williams says in the London *Lancet* be true, there is more reason to fear the effects of animal food in our diet, than any vegetable whatever. Overfeeding, living too generously, especially upon meats, is manifestly injurious to those who fall victims to cancer, and once more I must urge that constitutional treatment shall in all cases precede or immediately follow surgical operation, and the former should be given the preference. See Chapter XII.

### Syphilis.

Another of the great constitutional diseases the nature of which baffles the most earnest investigations of students of disease is syphilis. Like cancer it may be said of it, that as yet no true parasite has been found in the sores or secretions which in case of syphilis are so surely the means of communicating the disease from one to another. (It is not yet proven, however, that cancer can be transmitted in this manner.) As it was said of cancer, so it may be said of syphilis, that the changes produced in the diseased tissues seem to be such as may occur from simply a perverted or degraded action of the body's normal cells, as though they were operating wholly "on their own hook," without

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reference to the disturbance to other parts thus occasioned. Yet it may be said that they are stimulated to this diseased action by the presence of some microbe that has so far eluded the vision of microscopists; and this is made probable by the similarity of syphilis in some features to the acute infectious fevers and in others to leprosy, an even more chronic form of infection, which is now generally regarded as of microbic origin; but leprosy, if "catching," is far less so than syphilis. Whatever the nature of the syphilitic virus, it is undoubtedly easily communicated wherever it comes in contact with an abraded surface.

It is extremely fortunate that the virus is not *erosive*, and that it cannot eat its way through the natural protective scaly covering of the skin and mucous membranes, for if it were able so to force itself upon us its devastation would be far greater than at present, since the disease is not only acquired through venereal (sexual) contact, but in various other ways, and its infectious sores are not limited to the sexual organs. Even a chancre may occur upon the lip and be directly given to another lip, while the mucous patch inside the mouth secretes a *matter* which if left upon a cup, pipe, or musical mouth-instrument may be the means of starting a syphilitic sore on the lips or mouth of the next person who uses the infected article, if that person have an abrasion or crack on the lip.

Specialists who have traced the origin of syphilis in thousands of cases estimate that twenty-five per cent. of the cases among men and fifty per cent. among women are acquired "innocently," and the great variety of unexpected ways in which this may occur is astonishing. The extreme prevalence of syphilis in Russia is attributed more to the uncleanly habits of the people in general than to sexual promiscuity, and its medical men advise "vulgarization" of a knowledge of this subject as the only means of counteracting the tremendous evils of ignorance. Syphilis in the very young is more often hereditary than acquired, even innocently, but, as Dr. L. D. Bulkley says, "Even if brought into the world alive, the product of syphilitic conception has a relatively weak hold on life. This is instanced in the well-known statistics of the Moscow Hospital, in which, of two thousand syphilitic children born in eleven years, over seventy per cent. died. Fournier makes the mortality twenty-eight per cent. from exclusive paternal heredity, sixty per cent. from maternal heredity, and 68.5 per cent. from a mixed heredity. Some figures are even more appalling."

No space need be given here to the history or origin of syphilis as a disease. It dates back of recorded history, and it would take much less space to name the nations, if any which may have escaped it than of those which have long suffered. Races as well as individuals seem to acquire some immunity through experience. Those of Asia and Europe bear it far better than did the aborigines of Hawaii, among

whom it was introduced by Captain Cook's sailors one hundred years ago, with very fatal results and great reduction in population—much the same result as when measles is first disseminated among Pacific islanders who are unaccustomed to its presence.

It is rather fruitless to speculate as to whether the disease may be generated anew under the conditions of recklessness, excess, and all uncleanliness, where it is so generally distributed; for the seeds of the disease are so widely scattered in all the dens of harlotry that most new cases are easily traceable to some such source, while the multitude of roundabout routes by which its virus may be conveyed to innocent victims makes it fair to suppose in any case of doubtful origin that it has been picked up somehow, even though we cannot trace surely the manner of its invasion.

#### ITS PROGRESS.

Whether it be in the most innocent or most reckless manner, if the syphilitic virus finds itself implanted upon a slightly abraded mucous membrane, or a crack in the skin of the finger or lip, it becomes the spark by which a slow fire is started that may never be quenched, for in some scrofulous and impaired constitutions (by gout or Bright's disease) the disease develops with a rapidity and severity that can be moderated but not controlled. It so happens that because of susceptibility its innocent victims often suffer more than its vicious ones. From the time that the impure contact occurs there is a period of from ten days to four weeks, called "the incubation period," during which the virus is taking root and hatching mischief unsuspected. Then appears at the point of infection a red spot which becomes raised in a few days to a nodule or papule; this scales and softens on the surface until it ulcerates and secretes a thin liquid, which is more virus. Though this virus might provide material to inoculate a hundred more sores on other persons, it seldom starts another such sore on the same individual. The base and edges are hard, so that it is called a "hard chancre." It is often painless, generally slow to heal, and may last several months, generally about two months. What is called "the initial sore" may be so slight as to be unnoticed—a mere dry, scaling patch, or, in persons of very low, reckless, or filthy habits or "depraved constitution," it may become phagedenic or gangrenous, so that it may fail to be "characteristic" in being more slight or more malignant than usual. Within two weeks from the first "lesion" (the initial sore) the virus spreads through the lymphatics to the nearest glands, which become enlarged—perhaps in an effort to arrest it, and so ends the first, or primary stage.

The virus almost always pushes its way through the glandular system and reaches the blood (in about six weeks), and then the disease is

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called "secondary syphilis," and becomes manifest in slow fever, malaise, headaches—sometimes terrific—and a rash of numerous mottled red spots on chest, abdomen, or thighs, called *roseola*. The color fades on pressure. About the same time there may occur ulcers on the tonsils, sore throat and mouth, and falling out of hair. The red spots gradually become raised to papules—small, tense, firm, with smooth and slightly scaly tops, of the color of raw ham, without much irritation or itching about them. These are apt to come on the border of the scalp, on the limbs, palms, and soles. Vesicles and pustules also may begin to appear, or there may be "mixed eruption." Syphilis seems to have the power to develop any or all of the diseases of the skin, one at a time or mixed, but the peculiarities of its eruptions are

FIG. 240



GUMMY TUMORS.

their coppery color, absence of itching and symmetrical appearance, occurring on both sides in the same places. Rupia is one of its results in case it lays deeper hold on the skin, when papules ulcerate and leave accumulating crusts. All the secretions in this stage, whether from skin sores or mouth, are dangerous to others, and should be handled with care and destroyed. Some of the pustules leave scars or stains that last a long while. Syphilitic warts, wide and flat, are apt to occur about moist surfaces. The blood may become so anæmic as to cause a general pallor, so impure as to cause rheumatic pain in

muscles, bones and joints, or inflammation of the eyes. Iritis, the most common, is an inflammation of the iris, the curtain that makes the pupil of the eyes. The syphilitic virus seems to have an affinity for all the tissues, and to excite in them a low-grade destructive inflammation. It softens the bones, consumes cartilages, and leaves scars of its destructive devastation everywhere. See Plate VIII., of Syphilitic Lesions.

After this active all-around course, during about one or two years of what is called the secondary stage, there may be a period of three to five years, or even twenty, of quiescent brooding—if it has not been effectually cleaned out of the system—and the symptoms which then follow are called "tertiary"—or the third stage. They are mainly due to development of large or small "gummy" tumors or nodules in the

skin, where they may be seen or felt, or in the brain, nerves, or vital organs, and the symptoms are varied according to size and location of these lumps. Whenever symptoms are peculiar or hard to account for a physician is apt to think of this "specific" disease and inquire for its history. Tertiary lesions of the skin and mouth are likely to ulcerate and "act mean." At this stage the disease is no longer transmissible, by contact or heredity, according to the experts, but we should regard it a sorry fate for a child to be parented by such a case. Dr. George W. Fox no doubt expresses the present sentiment of the profession in saying "the old iron-bound division of syphilis into secondary and tertiary is being given up to-day, because some of the tertiary symptoms occur in the early course of the disease, while some of the so-called secondary lesions might appear fifteen or twenty years after infection."

#### ITS TREATMENT.

There yet remains a great difference of opinion among physicians as to the curability of syphilis and the propriety of advising marriage and parentage to those who have ever had the disease, even though no symptoms have appeared for many years. Some declare that "syphilis once, syphilis ever," must be the fate of anyone who has it, while others write at length and quote numerous authorities to prove it may be mild, benign, curable, and even that the disease itself may "die a natural death" untreated, as in India, China, and Brazil, where, though the disease is very prevalent, its treatment is generally neglected. Such differences of opinion among men equally capable are due to the long duration of the disease and the difficulty of keeping such cases and their descendants under observation until the health of their children and grandchildren can be fairly judged; and the other difficulty of knowing when the disease has exhibited its last symptom, and when it is simply latent or lying low, to appear again in the dim, distant future. Furthermore, it has been the custom of most doctors to rely on mercurial treatment, in spite of the fact that many of them admit it can only subdue symptoms and cannot cure the disease, and one eminent English writer, who has practically nothing else to offer in way of treatment, says of it: "The drug has a better chance for producing its fullest beneficial effect when the patient is kept a little below his ordinary standard of health!" In assisting Nature to throw off every other disease it is thought best to aid her effort to maintain the highest possible standard of health, and the success with which Nature alone copes with syphilis in countries above noted, where physicians and mercury are not employed, tends to show that if mercury temporarily represses the symptoms it helps also to fix the disease in the system—to bind it down in a Rdp Van Winkle nap, from which it may too often awaken and surprise its spouse after twenty years.

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In reference to treatment I have nothing to suggest to the unprofessional victim who wants to treat himself, except to say, beware of mercury. When it is proposed to give a remedy which will be the most efficacious by keeping the patient below his ordinary standard of health, it is best to let it alone. We poor mortals need the aid of the natural recuperative powers to work with our remedial agents, whatever they may be. It is yet to be shown that there is anything better for the purpose than vegetable medication, and this harmonizes and works with Nature's force without reducing the strength of the patient or depending upon the reduced condition of the system for effective work. It is far too serious a disease, both in immediate danger and ultimate possibilities of permanent injury of important parts, to permit of trifling or temporizing, and as soon as anyone has occasion to suspect its presence he will be wise to seek the diagnosis and advice of a trustworthy physician, for if an eruption on the privates be not syphilis it may be a simple skin eruption that might occur anywhere else, or it may be another form of venereal ulcer called chancroid that is often more speedily destructive locally than is true chancre. The progress of the disease, especially in its secondary and later stages, is so slow, and its symptoms are generally so unmistakable to an expert, that I am able to advise concerning such cases by mail, without the necessity of a personal examination. The exhibition of local or surface eruptions on Plate VIII. of the color plates, will enable the reader to get a good idea of how the most common ones appear, but it must also be remembered, as above remarked, that syphilis is a great imitator of many other skin lesions, and may be the cause back of a mere rash, an eczema or spreading ulcer of small or large extent. It is by the "history" of a case rather than by any one symptom, superficial or constitutional, that its syphilitic nature can be diagnosed. Those personally interested in further information should read Chapter XII. There is also much bearing on this disease in what is said of prostitution in Part I.

### **Skin Diseases.**

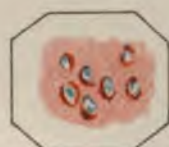
Books on skin diseases describe over one hundred kinds, but fortunately for mankind many of the most interesting to doctors are very rare, and only the most common need be mentioned here; but before even naming them the way for a clear understanding of them will be made easy by a very brief description of the anatomy of the skin and of the primary signs of its diseases. The skin is one of the organs of the body, spread out in a thin layer all over its surface instead of massed in one place like the liver. It is quite a complex organ, having many parts and several functions. It is generally described in layers, and, like an onion, may be dissected into few or many; but the main ones



# PLATE IX.

P. H. T. SEE PART I.

VACCINATION.



4



5



6



3

1. LIPS-SIZE LARGE ULCER THAT A NEW YORK HEALTH BOARD OFFICIAL CERTIFIED AS "PERFECT VACCINATION," ON TWELFTH DAY. THIS CHILD'S INFANT BROTHER DIED FROM VACCINATION.
2. A "NOT UNCOMMON" CASE OF PAPULAR ERYTHEMA, ALL OVER BODY, FROM VACCINATION.
3. TWELVE-YEAR-OLD BOY, WRECKED BY VACCINATION; SKETCHED FOR JOHN PICKERING, F. R. S., F. S. S., LONDON, 1890.
- 4, 5 AND 6 SHOW SMALL POX ERUPTION, VACCINATION AND CHANCRE (GREAT POX) AT SIXTH DAY; 5 AND 6 ARE MORE ALIKE THAN 4 AND 5. VACCINATION IS POXIFICATION.

PLATE X.

FACE ERUPTIONS.

PLAIN HOME TALK.



ROSACEA.



PIMPLES—ACNE.  
COMEDONES.



HERPES.

are the deep "true skin," the papillary layer and the epidermis, the latter consisting of horny scales which, under a mild magnifying-glass make our finest skin look as rough as a tanned crocodile's hide. In and through these layers are found multitudes of sweat-glands, sebaceous glands, and hair papillæ. These parts indicate the several functions of the skin. The horny layer is for protection, the papillary layer to afford places for nerves of touch; the sebaceous glands secrete an oily substance, to keep the skin soft and moist; the sweat-glands excrete perspiration and aid in elimination and in cooling the body, and the thick, firm skin affords a basis tissue for these useful parts and for the blood-vessels that supply them. Diseased action may begin in only one of these skin elements, though other parts are apt to become more or less changed also, and thus is produced a great variety of what are called skin "lesions," meaning changes from the natural condition. It will simplify the study of skin diseases themselves if the main "lesions" are first described. They are the "objective" (that is, the visible) symptoms.

#### THE MAIN AFFECTIONS DESCRIBED.

A mere excess of blood in some part of the skin produces redness—a rash—which may occur in spots, called *macules*, or, when diffused, *erythema*. If the red spot becomes projected in a small, solid lump, it is a *papule*, or, if slightly prominent, with a broader base, it may be a wheel (as in hives). If a pin-head spot becomes elevated, with a watery fluid, or, if it be as large as a pea, it is a *bleb*; if the contents are more creamy it is a *pustule*; while, if deeper and larger still, it is a *boil*. Hard, deep, small lumps may be *tubercles*, while larger ones are called *tumors*. An excessive production of the horny layer makes *scales*, and if hard with cracks they are *fissures*. A loss of horny layers makes an *excoriation*, which, if it goes deeper, causes an *ulcer*. If ex-

FIG. 241.



A MAGNIFIED CROSS-CUT OF SKIN.

Showing: 1, Fibrous and muscular layer; 2, 3, cuticle, or horny layer; 4, pigments, or color layer; 5, gland and vascular layer; 6, papillary, or sensitive layer; 7, sweat-gland, and, 8, 9, its tube.

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cessive secretion dries and hardens on the surface crusts are formed. *Scars* and atrophy (wasting) are relics of skin disease, but a *stain* may be a symptom or a relic.

The subjective symptoms are those which the patient feels, such as itching, tingling, burning, pain, tenderness, heat and "formication" (as though insects were crawling on the skin), and such symptoms may be present without any visible evidence of skin lesion. There are still other symptoms, such as an excess or lack of moisture (gland secretion), local perspiration, atrophy of the skin and falling out of hair, which may be present without other sign of local disease, but indicating some fault in the blood or nerve supply.

Some writers have preferred to classify skin diseases according to their symptoms, but the most simple and useful classification in helping to an understanding of their nature and treatment is that based on causes. Owing to its large exposed surface, and being the part where we come in contact with all the outer world, the skin is subject to injury such as most of the internal organs escape, and if it become burned, chafed, bruised, or inflamed, it is further aggravated by the invasion and irritation of parasites, always ready to pounce upon it and lend a hand in increasing its afflictions. There is a great variety of animal and vegetable parasites, from the ubiquitous microbes, to the penetrating itch-mite and the peripatetic louse. As to the microbes and some vegetable fungi, it is a debatable question whether they ever lay hold on a man's hide and begin a disease as first cause, but certain it is that there are plenty of them ready to revel in it if "the soil is prepared" by a letting down of general health, or if an opening be offered by local injury. In one skin disease, due to "constitutional weakness," as many as eighty varieties of bacteria and fungi have been found in the scaly secretions—a rich field. It may be that there are some persons upon whom the itch-mite, the louse, the ringworm or barber's itch fungi will not take hold, but there is no surety that a state of health offers invulnerability to them.

### THE CAUSES.

Aside from hereditary birth-marks and the purely local results of injury and parasitic irritation, the causes of skin diseases are nervous, or blood, or both. The champion blood disease—syphilis—has been called "the great imitator," because it has manifested itself in all forms of skin disease, and from this fact it is fair to conclude that all these varieties, when syphilis is not present, may be due to blood impurities of some other origin.

In short, what one blood poison can surely do another may, and so we find some of the most common forms of skin disease accompanying those states of malnutrition and imperfect elimination which constitute



what has long been known as the scrofulous state. This affords a foundation upon which to erect a great variety of skin eruptions, from *lichen scrofulosus*, a rash of pin-head papules in patches of various sizes, without much itching, to *strumous ulcers*, which spread slowly and exhibit slight disposition to heal, or *lupus vulgaris*, in which the bacilli of tuberculosis play an active part, taking advantage of the congenial soil which scrofula offers them.

## URTICARIA—HIVES. PLATE XII.

The irritating eruption which we early learn to call *hives* comes with an over-acid state of the blood, induced by some error in diet or indigestion, and is generally promptly relieved by a few doses of any suitable alkaline medicine. Yet *urticaria* is put in the class of nervous diseases by a writer of a very recent and readable text-book on this subject—Mr. Malcolm Morris, of London, England. He seemed indisposed to make any class of skin diseases due to blood derangements, and even writes of *eczema* without giving it any particular place in his arrangement of classification by causes, although admitting there must be "some constitutional peculiarity" as a basis, and that the state of gout or rheumatism is "favorable to the continuance of a skin affection."

The author is pleased to include urticaria in his list of nervous skin diseases, because he finds it the result of a "reflex vasomotor disturbance." In writing of nervous diseases it was explained how the size of blood-vessels and processes of nutrition are under the control of the vasomotor branches of the sympathetic nervous system, and how through any disturbance of normal action of one of these nerves disorders arise in the parts supplied by it. As the tissue-changes or nutrition of the cells which make up the skin as well as its blood-supply are under control of "trophic nerves," the direct relation between nervous and skin diseases is easily understood; but the state of the blood cannot be overlooked, since it is often an impurity in the blood that irritates the nerves and through them brings about the disorder in the skin. There are some skin diseases apparently due to nerve disturbance alone, but it is better to recognize as due to blood-impurity those which can be relieved mainly by the removal of that impurity. Yet there will be cases enough where both the nervous system and the blood are so evidently out of order that it would be an error to lay the blame on either one alone for a skin disease which could only be relieved by giving due attention to both blood and nerves.

## ROSACEA. PLATE X.

A blush is a temporary reddening of the skin due to an emotion causing a nervous failure to control the blood circulation through the

## 714 AFFECTIONS OF THE NERVES, BLOOD, AND SKIN.

vasomotor nerves, and no blood disorder is a necessary factor. If through some more lasting disturbance of nerve-control the flushing becomes a permanent blush, the congestive redness, as of cheeks and nose, is called *erythema* or *rosacea*—rose-face would be a more home talk name. The glands being over-stimulated secrete too much, and pimples arise until, after a time, “grog blossoms” develop. This may happen to persons not addicted to excessive use of liquors, but the fact that over-indulgence in alcoholics and chronic dyspepsia are cited as causes, shows that it is a skin disease in which the blood as well as the nerves must be looked after. *Chilblains*, dusky red or bluish patches, tender and itchy, occurring on hands and feet of scrofulous children and enfeebled elderly persons, are erythematous, and *frost-bite* is a further stage of the same process.

### PRURITUS—ITCHING.

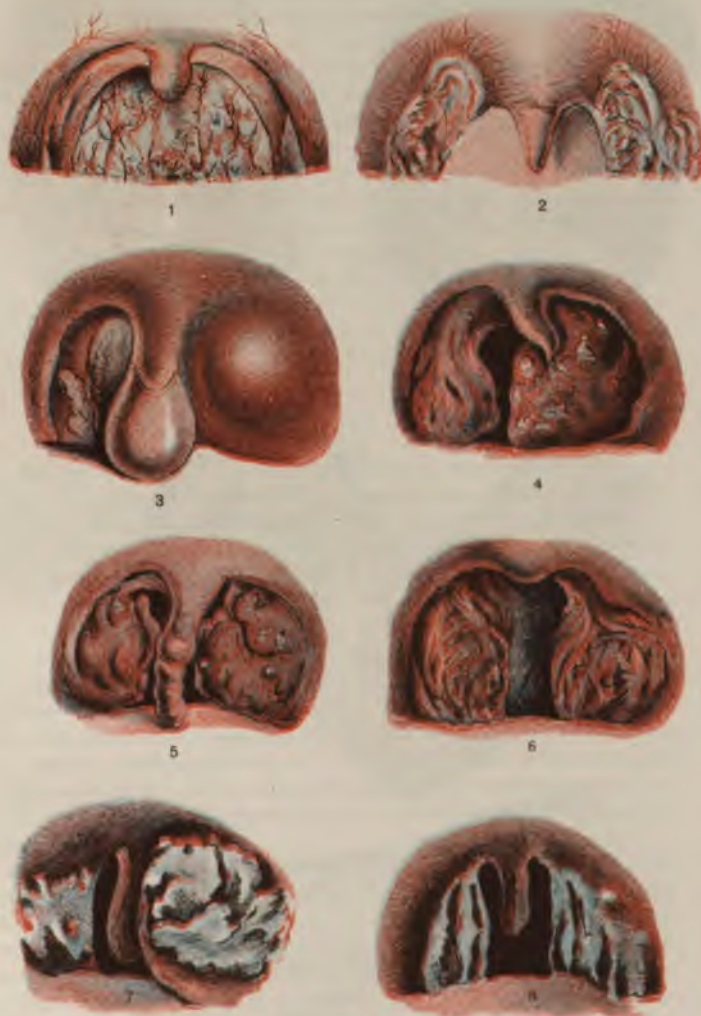
Dr. Morris includes *pruritus* also among “neuroses,” meaning that sort of itching which occurs “without any visible cause to account for it”; but farther on he says: “The causes of it are mostly constitutional—gout, rheumatism, jaundice and functional derangement of the liver; diabetes, Bright’s disease, dyspepsia, uterine disease or pregnancy. Many sufferers from pruritus are the subjects of lithæmia or oxaluria” (meaning a retention of acids which ought to be eliminated by the kidneys). Whether those held-in impurities titillate the superficial nerve-sense bulbs directly or indirectly, the disease is more in the blood than the nerves, and can only be relieved by cleansing the blood or paralyzing the sensitive nerves, and of course the first method is the rational and truly curative one. It is remarkable how serious this pruritus, without apparent skin disease, may be—enough at times to “drive one wild,” as its victims say, especially on going to bed. It is generally quite extensive, skipping all over the body, but it may localize about the genitals or anus, and then seems to be aggravated by the neighboring excretions. Such troubles are often due to errors in diet, especially excessive use of coffee, and the way out of them is to clean house.

**PRURIGO.**—When the blood state is a little worse there may be something to see as well as feel, and on the parts which itch intensely will be seen slightly raised papules, giving a nutmeg-grater-like feel to the touch, often with blood-crusts on them, if there has been much scratching, and it is almost impossible to keep the hands off. It occurs in infants and adults.

### HERPES. PLATE X.

*Herpes* may be accepted as a skin disease of purely nervous origin, and there are many varieties, from slight to serious. Ordinary herpetic vesicles, about pin-head size, occur in clusters about the face, mouth,





THESE PICTURES WILL AID IN DIAGNOSIS OF THROAT DISEASES.

AFTER SKETCHES FROM ACTUAL CASES BY LENNOX BROWNE, F.R.C.S.E.

- |                                          |                                          |
|------------------------------------------|------------------------------------------|
| 1. CHRONIC PHARYNGEAL CATARRH (COMMON).  | 5. CHRONIC SCROFULOUS, ENLARGED TONSILS. |
| 2. TYPICAL SYPHILITIC MUCOUS PATCHES.    | 6. CHRONIC ENLARGED TONSILS FROM QUINSY. |
| 3. ACUTE TONSILLITIS IN A GOUTY SUBJECT. | 7. DIPHThERITIC MEMBRANE ON THE TONSILS. |
| 4. QUINSY SORE THROAT, OR TONSILLITIS.   | 8. SORE THROAT OF SCARLET FEVER.         |

PLATE XII.

COMMON SKIN DISEASES.

PLAIN HOME TALK.



ECZEMA.



ECZEMA.



PSORIASIS.



HIVES—URTICARIA.

and genitals, with a sense of heat, tension, and some itching. They are apt to disappear in a week or two, and the cure is hastened by application of spirits of camphor. On the genitals the eruption is apt to cause more irritation, and hence sooner attracts attention than real venereal sores, and as there may be enlarged glands in the groin at the same time the fear occasioned is not surprising.

*Herpes Zoster* is an eruption of such vesicles in the region controlled by one particular (diseased) nerve-branch on any part of the body. It lasts from two to four weeks, and may leave permanent scars and disfigurement. This eruption, commonly called *shingles*, is apt to occur on the body, below the arms and above the hips, but only on one side. There may be a patch of it as large as a silver dollar, or a strip extending almost halfway around the body. There may be no discomfort other than heat and stinging, but some cases are extremely painful. Soothing local applications and warmth are helpful, and my Magnetic Ointment has served well.

#### ECZEMA—SALT RHEUM. PLATE XII.

*Eczema*, commonly known as salt rheum, may be described as a typical example of skin disease due to blood humor, or to scrofulous, catarrhal, rheumatic or gouty states of the blood. "Catching cold" or getting a chill may produce an internal catarrh of the head, the lungs, or the bowels, muscular rheumatism, joint inflammation or *eczema*. What determines the location of diseased action, when the blood is thus suddenly thrown into a state of fever, is not known; but it is evident from its relations as well as its appearance that an eczematous eruption is "a catarrhal inflammation of the skin, originating without visible external irritation," and attended by serous discharge. Dr. Piffard says: "No form of external irritation is capable of exciting true eczema in a perfectly healthy individual. \* \* \* It is due to retention and accumulation in the blood of an undue amount of excrementitious substances which, under normal conditions, would be removed by the kidneys as fast as formed."

Eczema makes its appearance in various forms, and often mixed lesion, including erythema, papules, pustules, vesicles, scales, cracks and crusts. Its appearance depends on location, chance of local irritation, and other factors; but essentially it is an inflammation, with redness, swelling, heat and discharge—a catarrh. The oozing moisture (serum) cakes, crusts, cracks, makes fissures, and when the scales come off there is left an angry, moist surface. Itching, heat, and discomfort attend it more or less, according to the space involved, intensity of inflammation, and general state of the patient. A little may drive some folks wild, while in others a good deal may be borne with slight complaint. All parts of the skin are liable to it, but it is prone to attack as

its favorite places the scalp, ears, palms, soles, surfaces about joints, and, in women, the breasts. The anus and genitals are places where a little of it will go a great way in making life seem not worth living. The skin becomes thick and tender, and cracking makes performances of the usual functions painful. It may take a turn occasionally and be substituted by dyspepsia, gout or asthma, and Brocq (of Paris) says that in children its rapid disappearance may be followed by dangerous congestion of the lungs. It is not comfortable outside, but may do worse inside; and hence the importance of always employing against it means for removal of causes as well as local palliatives or stimulants. Inasmuch as eczema appears as a symptom of many different blood derangements, and in both acute and chronic forms it is not possible even to outline a treatment suitable to all cases, in the choice of local applications one will find comfort or relief in what is to another an unbearable irritant. Fresh water is a local irritant to most cases, and should be used as little as possible. A little salt added to water makes it less so, and salt-water bathing may be advantageous. Its secretions, cracks and crevices naturally offer an inviting field for parasitic microbes, and their multiplication in such nests may easily make matters worse. Some eminent teachers have attributed all eczema to parasites, but while this is claiming too much, some cases appear to be contagious, for Jamieson has found the arms of nurses to become affected from carrying babies with eczema about the nates, and it seems possible to auto-inoculate it or extend the diseased surface on one's own body by scratching, thus ploughing up new susceptible soil and transplanting it.

#### OTHER SCALY SKIN DISEASES.

Eczema in its many forms stands at the head of the list of the eighteen more common skin diseases. Of the many thousand cases recorded by members of the American Dermatological Association during ten years eczema figured over thirty per cent., while even syphilitic skin eruptions only gave eleven per cent.; acne, seven per cent. There are other inflammatory diseases of the skin of the scaly kind, and sometimes of doubtful causation, but pretty surely not parasitic, which cannot be described here fully enough to enable anyone to make a diagnosis. Indeed there are cases that puzzle experts for awhile to name them confidently. In *Pityriasis* there is an excessive scaling off of flaky, bran-like scales, of dirty gray color. In *Lichen* there are solid, red, pin-head or pea-size papules, with glazed, shiny, or scaly top, occurring in groups, mainly on the limbs. Treatment, local and constitutional, is based on the same principles as in eczema. *Psoriasis* is a more common disease that may easily be mistaken for eczema; but its scaly patches are dryer, sharply defined, and less incrustated. Its eruption varies in size from a pin-head lesion to a silver-dollar, and its scales

are silvery white. The process of free coinage is often as persistent or irrepressible as the advocates of free silver. It occurs on the body and limbs and on the face only along the border of the scalp. It can often be quickly cleared off by pretty strong local applications, but of the milder sort *tar* in ointment or solution is one of the best; and generally constitutional treatment is also called for. *Seborrhæa* is a disease common to the face and scalp, which is like, and perhaps allied to, eczema; and yet different enough to deserve another name. It is due to excessive action of the sebaceous glands which, on the forehead or near the nose, may only cause too much *oiliness* or, on the scalp, dry scales called *dandruff*, with falling out of hair; but more commonly it produces greasy crusts, or large masses that mat the hairs together. There is less itching and inflammation than with eczema, but it is generally more extensive. The crusts can be removed by shampooing, and the part treated locally by my Magnetic Ointment or a sulphur lotion, but to prevent recurrence it is generally found necessary also to attend to other symptoms of impairment of health, such as indigestion, anæmia, scrofula, or general debility.

Overaction of the sweat-glands, *Hyperidrosis*, also results from debility, and it may be general or troublesome only on hands and feet, or about the armpits or genitals, and occurring thus locally it may be mal-odorously offensive (bromidrosis). Astringent lotions, disinfecting soaps, dusting powders, and stimulating ointments, are of much service; but a true cure is likely to require an improvement in the action of the other organs of elimination—liver, bowels, and kidneys—for the relief of the skin.

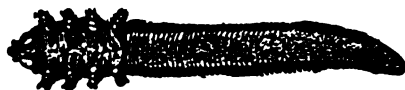
#### COMEDONES, BLACK-HEADS, WORMS. PLATE X.

In many conditions of ill-health the secretions of the sebaceous glands are liable to become too viscid, and stick instead of flow, thus filling the glands with *comedones* or *black heads*, which can be pinched, squeezed, or pressed out in little plugs. These plugs, that some call "worms," are condensed sebaceous matter, but in them may sometimes be found, by aid of a magnifying-glass, a *demodex* parasite, with eight stubby legs and a long tail. As it is not only found in comedones, but may be found in healthy follicles (not blockaded or black-headed) it is not considered causative. Squeezing out the black-heads, with as little hurting as may be, gets rid of them, but to prevent more coming the face should be steamed or washed with hot water and ichthyol soap, and my Magnetic Ointment applied to relieve irritation and stimulate healthy action. This ointment, being anti-parasitic and sedative (soothing), as well as slightly stimulating, is very useful in a large variety of skin diseases, and especially good for hair and scalp.

## ACNE. PLATE I.

*Acne vulgaris*, the ordinary pimply eruption, is an inflammation of the sebaceous glands, causing papules or pustules scattered over the face, neck, or body, mostly on young persons, and generally traceable to blood and nervous derangements, though here, too, parasitic microbes flourish, and Morris even includes it, somewhat apologetically, with *boils*, among inoculable affections. It is more common than eczema, but fails to so appear in the dermatological records because so many cases exist that the doctors are not asked to attend to. Some persons never bother with a face full of them, while others are greatly annoyed by even a few such spots on the complexion, and their common relation to sexual disorders in youth makes them very squeamish about them, and anxious to be relieved. Pimples are apt to break out anew in spite of all sorts of local treatment, unless the constitutional cause be attended to, and many are continually affected with them because they "will not bother with a course of treatment for only a few pimples."

FIG. 242.



DEMODIX, MAGNIFIED TWO HUNDRED TIMES.

The local treatment for comedones must be rather more persistently employed for pimples, but because of the pustules anti-parasitic soap is advisable in alternation with ichthyol soap for cleansing. The pustules may be punctured and evacuated before a hot water washing, but if done before they are ripe matters are made worse.

## BOILS—CARBUNCLES.

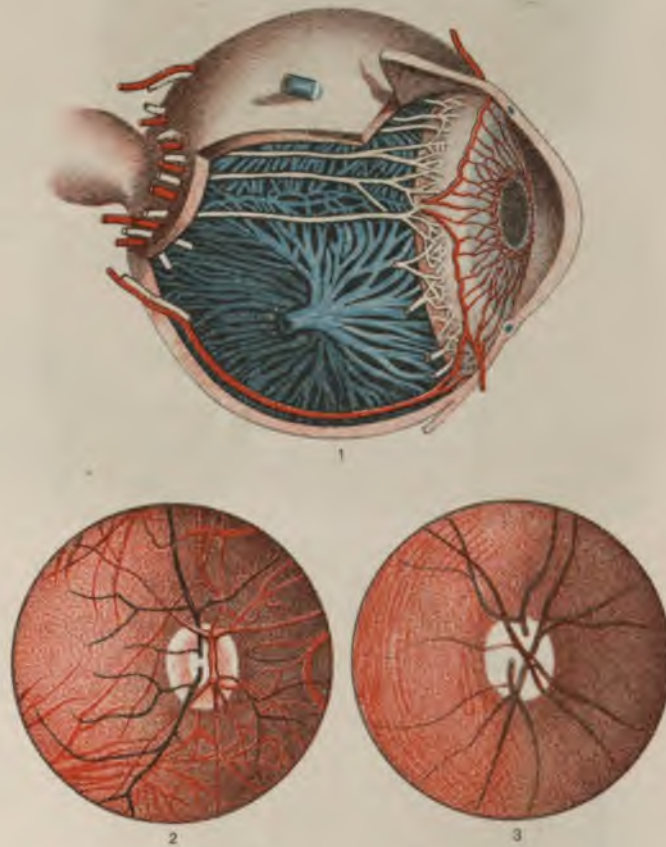
*Boils* are pimples of a larger growth, beginning in the sweat as well as sebaceous glands, and laying deep hold on the skin. They frequent the buttocks as well as the face and neck, and one is apt to be followed by more. It often seems as though the pus from one might carry the seeds (microbes) to start others, but Morris admits "this does not take place as a rule unless the patient is in a bad state of health," such as anæmia, or retained impurities from defective kidney action. If the process goes still farther and deeper, involving several glands, as it may in diabetics or persons of very impure blood, a *carbuncle* develops, which may lead to deep sloughing, septic poisoning, and death. Even the mildest specimens are generally serious and painful enough to make the victim want a physician to look after it, but he will be short-sighted if after pulling through with one he does not take advice and treatment to help him out of the state that predisposes him to them.



# PLATE XIII.

P. H. T. PART II.

HUMAN EYE.



1. HUMAN EYE; FIBROUS, HARD WALL CUT AWAY TO SHOW BLOOD-VESSELS (RED AND BLUE LINES) AND NERVES (WHITE LINES). BLACK OVAL IS THE PUPIL, AND AROUND IT THE IRIS AND CILIARY MUSCLE.
2. HEALTHY RETINA, AS SEEN BY OPHTHALMOSCOPE, SHOWING OPTIC NERVE (WHITE DISK) AND BLOOD-VESSELS.
3. PALE WHITE DISK AND SHRUNKEN VESSELS SEEN IN BLINDNESS FROM ATROPHY OF THE OPTIC NERVE.

PLATE XIV.

SKIN PARASITES.

PLAIN HOME TALK.



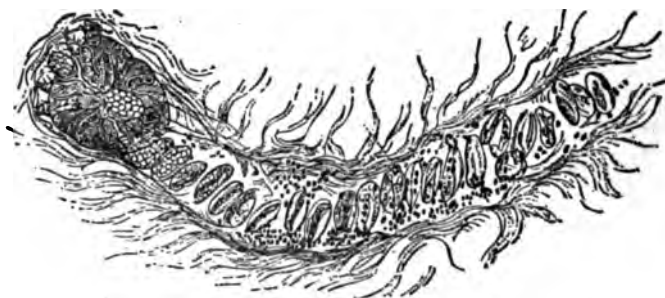
TINEA VERSICOLOR.

## PARASITIC SKIN DISEASES.

Even though all persons may not be equally susceptible to annoyance by parasites, it is fair to classify as parasitic those skin diseases in which the parasite can be discovered, and where anti-parasitic treatment cures the patient by killing off the parasites. Various skin diseases have been found directly due to the irritation of either animal or vegetable parasites, and in the brief space to be allotted to their description we may as well take up the worst first, omitting more than mere mention of bedbugs and other insects, which, though responsible for many a skin irritation, do not abide with us, or rather upon us.

*Scabies* is a disease caused by the doings of the itch parasite and, though it is only the female that goes below the surface in burrows, she "sticketh closer than a brother." She may bore half an inch

FIG. 243.



BURROW OF AN ITCH-MITE, HER EGGS AND EMPTY SHELLS.

under the horny layer (epidermis), leaving her fifty eggs behind her, and then die in her tracks, which, except in very uncleanly persons, may be seen. The skin naturally exhibits inflammatory lesions from so much irritation, and the result may be mistaken for eczema or other disease, for there is great itching, which may add to and obscure the symptoms. The burrows are most commonly found between the fingers and toes, or on the wrists or breasts, and there is a vesicle where *she* went in. If one can be picked up on the point of a pin it is visible as "a pearly object," though less precious than pearls. They "catch on" from one person to another, or are acquired by sleeping in another fellow's bed or borrowing his clothes; but since they have been discovered, and hospitals abound, the "itch" is far less prevalent than of yore, for a free bath with soft soap and plenty of sulphur ointment will rout them if used diligently twice a week until the new generations are disposed of, but the clothing must be treated as well as the patient, by boiling or fumigating with sulphur.

## PEDICULI—LICE.

*Pediculi*, familiarly known as lice, being several times larger than itch-mites, perhaps need no description for some of my readers, if their memory carries them back to the time of mothers and fine-tooth combs. What most persons able to read are not aware of is the terrible state of disease that may occur to the heads of neglected children among the slovenly poor for lack of the mother's combing. Mere itching is caused by the wounds made by the lice in feeding, but this, with scratching and filth, may lead to suppuration, scabs, and a "terrible mess." Oleate of mercury (five per cent.) which can safely be used externally with equal parts of ether effectually kills them out, but nits glued to the hair will develop a new crop unless removed by frequent washing with vinegar or a solution of soda and borax. Besides head lice there are two other kinds,

FIG. 344.



PEDICULUS PUBIS.

one that prefers the body and another that enjoys the pubic hairs ("crabs"). When there is much itching then a search is in order, and if the lice or their nits be found then "seeing is believing." The most effectual remedy is local use of tincture of staphisagria (which, since it is not everywhere to be found, may be obtained of the Sanitary Bureau Department). There are many other interesting animal parasites (to the naturalist), since "for ways that are dark" they are peculiar, but they are not common and troublesome enough to deserve particular mention here.

Coming to the vegetable parasites or fungi that make a heaven of the home afforded by the human skin, we find several called *tinea*, not because they are so tiny that only a high power microscope can show their spores and filaments, but that fact may help to remind us of the name. Since man lives so largely on plants, it is perhaps to be expected that some forms of plant life should retaliate and make a moss-bank of him, but whatever "the economy of nature" may have to do with parasitism, the fact is that many persons are physically as well as intellectually moss-backs; while, on the other hand, it is far easier to clear away many of the spots on the skin than spots on character.

## TINEA TRICHOPHYTINA—RINGWORM. PLATE XIV.

Most of us when children learned to recognize *ringworm*, but we haven't learned yet to call it by a better name—say *ring-plant*. We notice it in variable sized rings on the face and hands of children, or in the scalp. The centre is scaly and dull, while the margin is distinct, red, and raised. On the scalp the hair becomes brittle, leaving a "field of stubble" amid grayish scales. In adults it invades the beard only

(not the scalp), and is called barbers' itch, or *tinea sycosis* or *barba*. There it develops lumpiness or nodules and pustules, each one in a hair-follicle, destroying the hair. By careful examination of bits of hair or softened crusts under the microscope a vegetable fungus can be found. It is contagious from child to child, or from dogs and horses that have it, and through combs, brushes, and shaving materials. Such infected articles may remain dangerous for two years unless thoroughly cleansed with ammonia solution.

Ring-plant of the non-hairy surface is easily cured by any of many parasitocides—kerosene, iodine, sulphur, mercury, carbolic acid, salicylic acid or chrysarobin (see Chapter XIII.); but when on the scalp or in the beard it may involve a year's hard fighting, for the fungus is deeply rooted in and about the hair-follicles, where it is difficult to reach them with killing agents, and such cases had better be put in a doctor's care. It is generally necessary to *pull out* every hair in the diseased area and a few around it, in order to get the lotions into the hair-follicles where the fungus has penetrated. In the beard it is a "stayer," and may leave permanent scars and bald spots, if not properly weeded out. Its growth is favored by warmth and moisture, and it is well not to wash affected spots with water alone.

#### TINEA VERSICOLOR—PITYRIASIS. PLATE XIV.

*Tinea versicolor* is another fungus that spreads on the skin, and may occur over large areas of the trunk, causing a yellowish brown or "fawn"-colored stain, with slight itchiness, increased by getting overwarm. It extends slowly, does no harm, prefers adults and men, and is contagious; but there seems to be some state of the system which makes it easy for it to take root and hold on. Morris claims that "neither good health nor absolute cleanliness is a sure protection," but my experience is that "alterative" treatment aids to prevent new crops when there is great tendency to their development. Thorough washing with soft soap and water, rubbing with a flesh-brush and the application of a solution of hyposulphite of soda (one dram to make one ounce), is the "regular" treatment; but I have found my "Magnetic Ointment" to be a very effective antidote to this growth. In smaller areas some call this stain "liver spots," a name more appropriate for other discolorations really due to torpid liver and constipation.

#### How to Cultivate Beauty of Face.

If eyes were made for seeing,  
Then beauty is its own excuse for being.—EMERSON.

Emerson was right when he penned the above couplet. If we were all blind like ground-moles, it would make little difference how we

no way whatever injure the visual organs. The trouble of employing it is nothing compared with the daily annoyance of glasses, nor is its daily use necessary after a few months, according to the length of time the eye has been flattening. Only a very few applications are necessary for those who are just beginning to think it advisable to adopt spectacles. I would most urgently commend this instrument to such

FIG. 256.



THE APPLICATION OF THE FINGERS FOR  
NEAR-SIGHTEDNESS.

persons before they become slaves to glasses, for artificial lenses are liable to be laid down anywhere, and at any place, to the most aggravating inconvenience of the wearer, while the natural lenses, if carefully preserved, are always where they are wanted, and never left at home, or the office, or workshop. Those who are already enslaved to the spectacle-makers, will need no urging to induce them to avail themselves of the discoveries of science and art, to overcome their optical infirmity. However defective their vision, their eyes will not become tired of reading this essay, which they will peruse, from beginning to end, with eagerness and pleasure, and hail with gratitude their deliverer. A complete history of this remarkable instrument, together with the testimony of many who have employed it, interesting to all who wear glasses, is given in a pamphlet—“~~Old Eyes Made New~~.” (See page 1248.) Enough letters commendatory of its utility have been received to fill every page of this book, and in the pamphlet above referred to, a few will be given as fair specimens of the many in the hands of the author.

#### Near-sight, or Myopia.

The foregoing essay gives little but discouragement to a large class of people who are affected with near-sight. Since I first introduced the instrument for restoring far-sight, many years ago, I have been called upon by swarms of pretending inventors—some greedy—others adde-



pated—having in their hands some device for flattening the eye. Of course it is not logical to say that side pressure upon the eye will impart convexity, while a flat pressure upon the face of the same will not result in causing less convexity ; but there are two objections to the use of instruments for flattening the cornea in cases of near-sight. *First* : near-sight is in nearly all cases congenital. In other words, those so affected were born with just such eyes, and consequently it is more difficult to *change* Nature by attempting to flatten such eyes, than it is to *restore* to convexity those which were originally right, but have become flattened by age or bad manipulations. *Second* : no instrument can be devised for producing pressure upon the face of the eye, so complete as the balls of the fingers. I do not by any means deny the utility of pressure upon the face of the eye in cases of near-sight ; I only call in question the merit of any mechanical instrument for that purpose, while reminding all near-sighted persons that they cannot expect as much nor as speedy benefit from this flattening pressure as far-sighted people receive from the means I have devised for restoring the convexity of the eye. Everyone having a particle of discrimination can see this ; but were I near-sighted my fingers should always be employed, in my leisure moments, by placing the ball of the first finger of my right hand on my right eye ; the next one on the bridge of the nose to steady the hand ; and the third on the left eye—both eyes being closed. With the elbow resting on a table, and the head slightly bent forward to give an easy position, you have in this way, near-sighted reader, the best instrument ever devised for improving your vision, and I would urgently advise you to adopt it and use it perseveringly every day, though you may perceive no change for the better in three months. In time it will affect your sight favorably, and you might as well substitute a habit of thus pressing your eyes, for some other habit which you are conscious injures you—smoking, perhaps. The pressure may be gentle, and continued at each sitting for fifteen or twenty minutes. Fig. 256, represents the position the fingers should occupy in the act of imparting this pressure.

#### Other Optical Defects.

Besides far-sighted and near-sighted eyes, there are other defects of construction whereby the sight is not readily and properly focused as it should be, but very full explanation would necessitate more space than can be allotted to them here. Hypermetropia is a congenital defect in which even children are aided by convex glasses usually worn by old folks ; and astigmatism is another common abnormality which calls for specially cut glasses of great variety. Astigmatic eyes do not see all the spokes of a wheel (in a picture) equally plainly. Some eyes are affected with both myopia and astigmatism, and there are other

combinations of defects. The proportion of such defective eyes is increased by the arts of civilization, and by putting the eyes to more strain of some kinds than they seem able to bear. Near-sight is known to be developed largely in early school life, and probably by too long and continuous viewing of near objects, fine print, etc., at a time when the tissues are plastic and easily pressed into abnormal shapes. A news item reports that half the white men offering themselves for examination for army service in 1898 were found to have defective vision, while no colored men were disqualified on this account. The attention given to optics has done wonders to aid all sorts of defective eyes, but it has also enabled many persons so affected to continue overtaxing their defective eyes until they have paid the forfeit in some form of blindness. Many notably successful professional and business men could be cited as terrible examples of this kind. If one must use defective eyes in ways to which they are not well suited, he should have the best possible fit in spectacles by tests familiar to the expert oculists and opticians, and not depend on fitting himself to glasses as he would to shoes. Furthermore, many need to have new tests from time to time, and a "new suit" of eye-glasses. The defects described are not to be classed as diseases, but such eyes are more prone to disease than others, and should be used with more care.

#### Diseases of the Eyes.

The more common diseases of the eyes are mainly the result of accident, inflammation, or degeneration—wasting from malnutrition. The most frequent accident is getting some foreign substance in the eye, and the sooner it can be removed the better. Turning down and up the lids often aids to find and dislodge it; but a bit of steel or cinder may get fixed on the cornea in a way to need the care of a surgeon as soon as possible. The prompt flow of tears is Nature's way of washing out such offenders, and often suffices for the minor ones, but those which take hold and cling may soon excite acute inflammation and endanger sight.

The deeper as well as the superficial layers of the eye are subject to a variety of inflammatory diseases, but their diagnosis can only be accurately made by means of examination with the ophthalmoscope, a little but great instrument which enables the physician to see into the interior parts. Most of these deep-seated diseases, even to *cataract* of the lens, or atrophy of the optic nerve, are as surely the outgrowth of blood disorders as is a simple sty on the lid, and some of the most serious of them are symptomatic of diabetes, Bright's disease, syphilis, etc. The diagnosis of such diseases, involving and threatening the precious sense of vision, can only be safely entrusted to those who have

opportunities to make special study of the subject ; but from the nature of these diseases their treatment often falls more appropriately to the general specialist than the oculist.

Looking into the eye to see its fundus, or bottom, is like trying to see what is in a jug. The inlooker cuts off the light, and all is dark within ; but the ophthalmoscope is a little mirror with an orifice in the centre by which light can be thrown by reflection from the mirror into the jug or the eye

while the observer is stealing a look through the middle aperture. It was the happy thought of a German named Hoffman, and its practical application has literally thrown great light on the diagnosis of eye diseases. The fundus of the normal eye, thus viewed, is a fine picture, of which you get

FIG. 257.



EXAMINING THE EYE WITH THE OPHTHALMOSCOPE.

a faint idea when you sight occasional glimpses of a cat's eye lit up by a lamp-light. With the instrument it is possible to see the condition of the optic nerve, and the delicate blood-vessels that enter with it. The expert examiner can learn something not only of the state of the eye, but also of the blood-vessels of the brain. The reader will find on color Plate XIII. a pretty picture of the normal retina, and also one that has lost sight through the wasting disease known as atrophy of the optic nerve, which is nowadays not infrequently simply a result of wearing out the vision by excessive use of the eyes. The very busy millionaire merchant, well-known throughout the United States, Mr. Charles Broadway Rouss, has in vain offered a fortune for a cure. He seems to have had unlimited capacity for work, except with the eyes, and they are practically used up—dead beyond redemption—in the nerves (optic nerves) which in good condition would be capable of wiring views to the brain. The beautiful picture of the anatomy of the eye on Plate XIII. will help the reader to appreciate its wonderful structure, its intricacy, delicacy, and consequently the need of care in its use.

The most serious diseases of the eye are of course those in which organic change has occurred, but this is generally due to, or preceded by, some constitutional disease that impairs the quality of the blood, or the tone of the nervous system, so that it is through gradual interference with its nutrition that the eye has become inflamed, hardened, softened, or wasted in part. There are many cases of eye trouble not so far advanced, which depend almost entirely on a state of general ill health. Mere lack of nerve-tone, or nervous debility may first express itself in tired eyes that cannot work long or steadily at anything; and in another way the eyes may suffer from what we call reflex nerve-symptoms—as when they suffer from disturbances of the digestive or sexual organs. In many cases the eye symptoms need no other treatment than that which is directed to the seat of the disease. But when the blood is quite impure, the eyes may suffer from congestion, catarrhal inflammation, or neuralgia, and in such cases local treatment for the eyes is of less effect than the use of means to improve the quality of blood with which they are served. Considering the vascularity of the eye, it is not at all surprising that impurities make them wince or inflame. Any reader of this volume who has any defect in the vision, is at liberty to consult the author by mail or in person without cost, and if it be a case requiring the medical or surgical treatment of a skilful oculist, he or she will be conscientiously so advised. If it should be a case resulting from some derangement of the vascular, nervous, or digestive system, or from affection of the vital organs, the sufferer can be directed to the right path for recovery. Answers to the questions on page 761 will be sufficient to enable me to give the required advice,

### Chronic Sore Eyes.

The mechanism of the eye is such, that the presence of inflammation or congestion in them is exceedingly mischievous. To perform its offices easily it has to be kept well lubricated. To this end the lining of the socket is not only provided with sebaceous glands, but over each eye, in the upper part of the cavity it occupies, there is a reservoir called the lachrymal gland, which pours out upon the ball a fluid slightly mucous and saline; and, to make the arrangement complete, at the inner corner of each eye there is a canal, the orifice of which is large enough to admit a bristle, and which in health conveys off any excess of this fluid, as well as that which has become too old to be made useful. These canals connect with the nasal duct. To prevent the lachrymal fluid or tears from running down over the face of the eye when open, there are a number of minute glands along under the edges of the lids which secrete an oily substance. This, with the im-



perceptible pressure of the edges of the lids upon the eyes, holds back the watery secretions, which pass down around the inner edges (as if eave-troughs confined them) to the tear-ducts before described. The oil-glands at the edges of the lids also prevent the latter from becoming a-glued or stuck together during sleep. Without them it would be difficult to get the eyes open in the morning. Even the eyelashes at their roots have the oily secretions common to all hair, which lubricate them, and prevent them from becoming adhesive when moistened with the watery secretions of the lachrymal glands. In addition to all this ingenious and wonderful mechanism, the veins of the eyes in health are too small to admit the red corpuscles of the blood, and it is by this arrangement that the whites of the eyes in health preserve their clearness, and the lenses are enriched by colorless blood, for otherwise the vision would be obstructed by specks, spots, patches, etc., even in health.

FIG. 258.



MECHANISM OF THE EYE.

- 1, Lachrymal or tear gland ; 2, 3, its ducts ; 4, its orifices ; 5, mucous membranes of the eye ; 6, cartilage of the lid ; 7, sebaceous glands ; 8, their orifices on the lid ; 9, tear-ducts to convey tears to the nose.

With the foregoing brief description of some of the mechanical arrangements of the eyes, it may be readily seen how inflammation or any undue pressure of blood upon the organs of vision, and their immediate surroundings, will interfere with the proper performance of their functions. When inflamed, red, feverish corpuscles enter the veins, they redden the sclerotic or white of the eye ; they distend the veins of the eyelids and linings of the sockets ; they vitiate the secretions of the lachrymal glands, or reservoirs over the eyes, making them scalding in their properties ; they dry up or make gluey the oily secretions of the glands along the edges of the eyelids, and also those which keep the eyelashes from becoming matted or stuck together. When all these derangements take place a person has what are commonly called sore eyes, and technically, ophthalmia. When the difficulty survives the immediate cause which precipitated it, whether the immediate cause be cold or catarrh, or something getting

into the eye, or local infection, or contusion, or, if it comes on gradually without any known immediate cause, it may be called chronic sore eyes, or chronic ophthalmia.

Sore eyes induced by a cold may simply present an inflamed and swollen appearance, with a profusion of water, and sensitiveness to light; induced by catarrh, similar symptoms with an exudation of unwholesome mucus; induced by something entering the eye, soreness, and sometimes great pain attended with an excessive flow of the lachrymal fluid; induced by contusion, similar symptoms to those just described; but when induced by infection such as leucorrhœal or gonorrhœal or syphilitic matter, or perpetuated by scrofulous or syphilitic impurities in the blood, the discharges are purulent, with all the foregoing symptoms combined; and the poisonous matter which is exuded, if brought in contact with the lids of healthy eyes, proves contagious. It is believed by some people that simply looking into such eyes will affect healthy ones; but I am confident that all such supposed cases came some way in contact with at least a particle of the diseased virus. In a family, for instance, where chronic sore eyes attack one of the children, and then the difficulty spreads to several others, it will probably be found on close investigation that they have played with each others' toys, or wiped on the same towel, in either of which ways a little grain of the diseased matter may have been communicated to the eyes of the healthy child. Women having had leucorrhœa, and men affected with gonorrhœa; or others of either sex having syphilitic ulcers or sores, should always be extremely cautious not to touch the fingers to the eyes after they have been in contact with the affected parts, and should carefully avoid wiping the face with the same towel used for wiping the hands. Health officials have of late announced that the prevalence of sore eyes, and even the proportion of blind persons to the whole population, is on the decrease as a result of instructing school children and restricting them in the exchange or indiscriminate use of towels, handkerchiefs, etc. If "publicity, publicity, publicity," by proper education, has been thus proven to be of great service, the hundreds of thousands of copies of this book which in years past have been issued with the above instructions, must have served a useful purpose. Greater care during childbirth to insure cleanliness of the mother and prevent contamination of the infant's eyes has also prevented many cases of blindness from the ophthalmia that used to be common in babies just born.

In the treatment of chronic sore eyes the blood must receive the main attention. No case will become chronic unless the blood was previously impure, or became so by the infectious matter with which the eyes were inoculated. I have cured many cases without any local treatment whatever; but when the latter is resorted to, it should be of a



mild healing nature, and always accompanied with thorough medication for the blood.

### Cross Eyes.

The muscles that roll or direct the eyeball are six in number—for each eye—and their coöperation when they do work in harmony is one more of the wonders of vision, besides being a beautiful sight to see—when in the presence of a particularly pretty pair of eyes; but the cross-eyed lass is at a disadvantage as well as her visitor. He may think she is casting a glance at some other fellow, when he only is *the* man in her eye. Cross-eyed school-masters are always a great bother to the boys, who naturally perpetrate their mischief when the eyes of the teacher are apparently not on them; but when the tutor has optics like any of those given in the annexed illustration, and especially if like *C*, the boys are entirely adrift, and find it unsafe to look off their books, or throw paper bullets at their fellow-students. There can be no doubt that all congenital formations of this kind were originally intended for school-masters and school-ma'ams, but the fall of man has so mixed up things, that cross-eyes seem to present themselves here and there without a particle of reference to avocation, and school-boys are not often enough afflicted with teachers having them.

In the annexed illustration, *A* represents a single convergent squint; *B*, a double convergent squint; *C*, a double divergent squint; and *D* a convergent and divergent squint. The displacement of the eye in any one of the cases illustrated, if congenital, or in other words, when the person affected was born so, results from the natural contraction of one set of muscles, and the natural extension or relaxation of those on the opposite side; but this same position of the eyes may be produced by

FIG. 259.



CROSS EYES.

disease affecting the muscles; or it may be acquired by practicing it for sport; or a weakness of one set of muscles and a contraction of the other may gradually take place without any visible cause. Strabismus generally must be treated both medically and surgically, and in my surgical department all operations of this kind are performed by an experienced operator, who does the work so expertly as to give the patient scarcely a particle of pain. When there is cerebral affection or weakness of the eyes, medication alone will sometimes overcome the difficulty, but if not, it should either precede or immediately follow an operation.

#### OTHER DISEASES OF THE EYE

will not be presented here, as more space than was originally apportioned to this division of the chapter is already occupied. I will, therefore, call the reader's attention to diseases of the ear, after remarking that all affected with any diseases of the eyes are at liberty to consult the author, without fee, in relation thereto. In all letters of consultation, answers to the questions on page 761 should be given.

#### Defective Hearing.

If the non-professional reader could follow me through all the circuitous paths of the ear without becoming befogged with the technical names anatomists have bestowed upon the various organs therein; if the common mind could be made conversant with the complex physical machinery of the organs of hearing; and then, if we could all of us comprehend the mysterious, ever-hidden connection existing between the physical organs of sense and the conscious principle, we might cease to wonder at, but never to admire, the peculiar mechanism by which all of us, gifted with the sense of hearing, are made conscious of so much that is passing in the material world through that remarkable something we familiarly denominate *sound*.

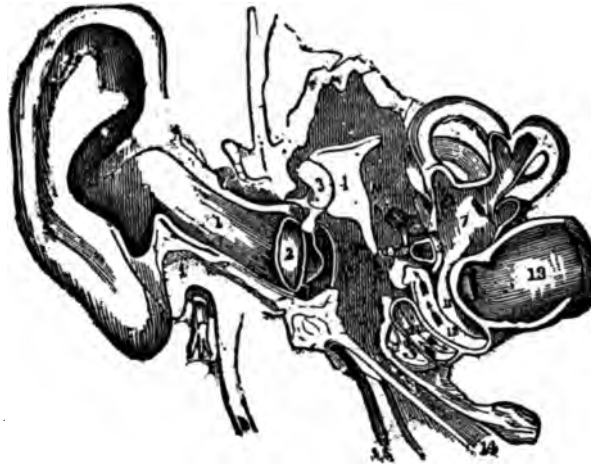
Your friend speaks to you. How are you made aware of the fact, and of the impression he wishes to convey to your mind? He expels from his lungs currents of air, shaped by the organs of the throat and modified and chopped off here and there by the motions of the tongue and lips, so the air moves toward you in what may be called articulate waves. These fall upon the external ear, which is so modelled as to conduct them into the orifice, where they soon come in contact with the ear-drum, technically called the tympanum. This instantly vibrates in perfect accord with the motions of the articulate waves, and the vibrations of this organ in turn set in motion other waves in the air confined in the cavity beyond, when motion is communicated to reeds of delicate bones—the smallest bones in the body—and to fibres of muscle, which vibrate like the reeds of an organ when acted upon by currents

of air, or the strings of a violin when agitated by the finger or bow. Thus further modified and intensified, these waves move onward through irregular cavities, circuitous canals, convoluted tubes, and delicate membranes, all of the most wonderful complexity, until reaching the labyrinth, or parlor of the ear, where there are cushions of fluids upon which they fall and set in motion multitudinous little granules of calcareous matter, whose agitation frictionizes the sensitive, minute branches of the auditory nerve, which penetrate the sacs confining the granules. This influence conveys to the mind what is commonly called sound; but just how this is effected no human anatomist or physiologist is likely ever to be able to determine. The phonograph, graphophone, and other wonderful inventions of the latter part of the nineteenth century, impress one as nothing else can, with the extreme sensitiveness of the normal nerves of hearing. When those nerves are, so to speak, in tune, observe in the workings of the instruments referred to, how simply the rapid revolutions of what are called the "records" will, with their lines and dots which are somewhat similar to embossed writing, set in motion atmospheric waves capable of reproducing the human voice, and faithfully reporting a communication or an address; or, parrot-like, reproducing the music which the instrument has caught upon the surface of its plastic cylinders in some opera or music hall. Considering the complexity of the hearing machinery, and the delicacy of the various parts composing it, exceeding in some respects the wonderful mechanism of the eye, it is not at all strange that many are affected with partial and some with entire deafness. Not a single tube can be closed, not a bone or fibre destroyed, not a particle of change in quantity or quality of the fluids of the sacs, or those moistening or bathing the membrane lining the canals or cavities, occur, without affecting the accuracy of the impressions conveyed to the mind through the mechanism of the ear.

Let us briefly look into the most common causes of defective hearing. We will commence as soon as we penetrate the orifice. In what is called the external opening, between the outer orifice and the eardrum, there are yellowish colored glands which pour out upon the lining of this canal a fatty, albuminous, yellow substance, possessing some of the properties of bile, which we call the ear-wax. The true office of this secretion is probably to exclude insects from the ear, as it is disagreeably bitter and adhesive. Flies, mosquitoes, fleas, and the minute inhabitants of the tenement bed-chamber could make as little headway through this secretion as they could through molasses, while its flavor to their epicurean teeth would be far less palatable. So long as this secretion is not deficient, excessive, or vitiated, this portion of the ear generally performs its function properly. But if it dries up, bacteria or insects may nestle there, irritate the canal, and obstruct the

vibrations of the air ; if it becomes excessive, or gluey and dense, then the canal is obstructed, and in some cases completely filled up. A deficiency, excess, or vitiation of this secretion, called ear-wax, may therefore render the hearing defective. Children have a propensity to poke beans and other small things into the ear and even forget having done so, in consequence of which many a trouble with the ear of a child originates from this cause, and it may only produce partial deafness, or

FIG. 200.



THE HUMAN EAR.

1, external auditory canal ; 2, drum of the ear ; 3, 4, 5, the chain of three bones stretching across the middle ear, popularly called the hammer, the anvil, and the stirrup ; 7, part of internal ear called the semi-circular canals ; 11, 12, another part of internal ear, called the cochlea or shell ; 13, auditory nerve ; 14, Eustachian tube leading from the throat.

a local inflammation and discharge. Gently and persistently injecting warm soap and water may remove some such foreign substance, but beans and peas may absorb moisture, swell, and become too closely impacted to be easily dislodged. So it often becomes necessary to call upon the skill and instruments of a surgeon to remove these obstructions or to clear the external orifice of the ears of plugs of wax, which have become hard and firmly anchored therein. Adults sometimes introduce small pledgets of cotton and forget all about them after they have been a few days lost sight of.

The external opening of the ear terminates with an organ called the tympanum or ear-drum, a membrane nearly circular in form, and



fastened in a bony ring. Its external surface forms a conical concavity highly polished, and in the living subject the membrane is nearly transparent. Naturally it is without orifice, but in some persons, by disease or accident, it may have become slightly perforated without materially affecting the hearing. If, however, this organ be greatly perforated, or nearly or quite obliterated; or if it be thickened or indurated; or if the muscles controlling it be weakened or destroyed, hearing may be defective or lost altogether.

The inner side of the ear-drum is what is called the cavity of the tympanum. This must be supplied with air to make the hearing complete. The air reaches it by what is called the Eustachian tube, which opens like a trumpet, large enough to insert a pencil-point in the throat, and extends along upward and backward, for nearly two inches, when it opens into this cavity; but the lining of the latter secretes a mucus, with which to moisten its walls, and in disease this secretion may be thick and excessive, in which case it fills up the Eustachian tube, and thereby excludes air from this cavity, and in many cases fills the cavity itself. Or, if the mastoid cells or sinuses, which have an opening in the cavity of the tympanum, nearly opposite the Eustachian tube, be the seat of irritation, the secretions of these may deluge the cavity or clog the tube. In some cases, these walls, cavities, and tubes are affected with catarrh, and become congested with catarrhal matter. Whenever or however they are obstructed, the person so affected cannot hear distinctly, if at all.

The most common seat of deafness lies just here in the drum of the ear, in the small space at the inner end of the Eustachian tube; and the most frequent cause is the extension of catarrhal disease along the membranous tube, from the throat, or a catarrhal inflammation beginning in an acute cold affecting the space of the drum. Acute disease hereabouts may destroy various delicate parts, distort the little bones, and totally destroy the hearing apparatus, or chronic catarrh may thicken the drum, distort its form, bind down the bones, and thicken the membranes of the middle ear space so that normal vibrations are greatly impeded. Ninety per cent. of cases of impaired hearing are due to this condition of the complex organ of hearing, and ninety per cent. of humanity have more or less of it at some time in their lives, with temporary or permanent loss of hearing to some degree in one or both ears. It sometimes happens that the labyrinth, with all its delicate appurtenances, becomes the seat of disease, obstructing communication with the tympanum, or causing such a change in the fluids of the sacs containing the calcareous granules, that the auditory nerve fails to receive any impression from the vibrations going on in the tympanum, or its vicinity. In either case, partial or entire deafness must ensue.

Ulcerations sometimes take place in the delicate organs of the ear. It is terrible to have such visitations here, for they are liable to destroy the walls of the tubes, canals, and cavities ; to eat away entirely the ear-drum, and to break up and destroy the delicate bones and muscles, forming the reeds and strings, and to expel them through the external opening in the form of offensive matter. Entire deafness sometimes results from these ulcerations.

No form of disease, however, can be more complete than that caused by paralysis of the auditory nerve. All the other organs of the ear may be in complete order, and mechanically vibrate to every atmospheric impulse. The articulate waves may move along regularly through all the natural cavities and tubes, and enter the labyrinth with the greatest precision and order ; they may set in motion all those peculiar little granules which play upon the termini of the auditory nerve, but if the latter be paralyzed, no intelligence whatever is conveyed to the brain. This line of telegraph is practically down, and although the brain may be in communication with the external world by telegraphic connection with the eyes and other organs of sense, no message whatever is received via eardom. The approach of paralysis of the auditory nerve is usually heralded by noises in the head, ringing and roaring in the ears, and, in some cases, by acute pain. There are constantly motions taking place in the atmosphere of so slight a nature that the healthy auditory nerve is not impressed by them. If you please to call them sounds, then there are sounds of which the normal auditory nerve takes no notice. But when that nerve becomes irritated or inflamed—as sensitive as a tender tooth—it feels every impulse of the air, however slight, and considering the forms of the canals through which these impulses pass, the sensation conveyed through the irritated nerve to the brain is more commonly that of roaring. This is undoubtedly mainly due to what is called the cochlea, which is a conical tube so convoluted that its form resembles the shell of the snail, having, however, two cavities, one of which begins at the vestibule and the other at the tympanum, and continues through its whole extent. Nearly everybody has undoubtedly noticed what a roaring noise a large shell produces when held near the ear. When the auditory nerve has only the sensitiveness natural to it in health, the shell needs to be nearly or quite as large as a hen's egg ; but when it has the acute sensibility which irritation or inflammation imparts, even the action of the air in this little convoluted tube, having the form of a shell, conveys to the nerve and thence to the brain a sound similar to that experienced when a large shell is held against the ear. This is a new theory, of my own, but I think it will commend itself to physiologists. All the peculiar noises experienced in the ears of persons having affections therein, like the singing of a tea-kettle, ringing and ticking, indicate an undue sensibility of the auditory



nerve, which is made conscious of motions of air in the tubes, canals, and cavities of the ear, of which, in health, it is not cognizant; another cause of such annoying sounds is the loss of delicately adjusted balance of bones, membranes, and fluids whereby the tension becomes abnormal, both in the air of the middle ear, and the fluid of the inner ear. Quinine, in overdoses, and other drugs, cause ringing noises by disturbing the blood circulation in these deep parts of the ear, and it is fair to suppose that self-developed blood impurities may act in the same manner. When these noises continue for a long time, a reaction is liable to follow, and the auditory nerve changes from this acute sensibility to partial or entire insensibility, and at this juncture of the disease, defective hearing or complete deafness ensues.

Complete deafness is usually incurable. If, however, a person can hear a little; if by the aid of ear-trumpets the human voice can be heard and its language understood, it is generally prophetic of the possibility of recovery, if the right course be pursued by the physician having the case in charge. Every one affected with partial deafness should intrust his case to a skilful physician who is thoroughly acquainted with the anatomy of the ear, and who has had experience in the treatment of its diseases. No practitioner deficient in these qualifications should attempt to treat partial deafness, and especially should the victim of this affection refrain from any attempt to devise or apply local remedies unless guided by the advice of a physician.

Persons observing the approach of difficult hearing may many times prevent the development of deafness by taking remedies suitable for purifying and strengthening the blood, because all the secretions of the ear are derived from the circulation, and will be healthy or unhealthy according to the pure or impure condition of the vascular fluids; but when the affection seems to be steadily coming on in spite of general constitutional treatment, obtain without delay the advice of a medical man in whom you have confidence.

Paralysis of the auditory nerve has in some instances been cured by the judicious application of electricity. Deafness resulting from the obstinate obstruction of the Eustachian tube has been relieved by admitting air into the cavity of the tympanum by slightly perforating the ear-drum. Defective hearing caused by entire destruction of the ear-drum has in some cases been greatly benefited by wearing a false tympanum. For many years I supplied artificial drums by mail, but the number of cases in which they proved helpful appeared so very few, I discontinued recommending the device for self-application; only expert examination of the ear can decide when the artificial drum is likely to be of service. It is, however, a harmless experiment, even when a disappointing one, and the price, which need not exceed one dollar, is not a severe tax. Catarrhal people affected with deafness have

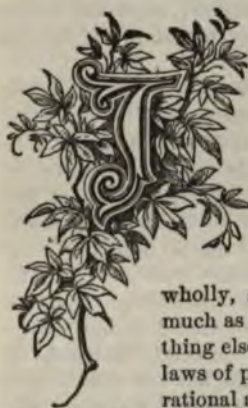
many times entirely recovered from the latter by the cure of the former. Scrofulous people who have nearly lost all sense of hearing may generally have that sense restored by the eradication of the scrofulous impurity if ulcerations have not impaired the structure of the ear.

The miraculous cures of deafness are generally effected by removing a plug of wax from the outer canal. This sort of "stopper" of hearing can be extracted by a physician with instruments, or, at home, by persistent warm-water injections, and the cure is immediate if the plug has not been there so long as to paralyze or injure the deeper parts. Hot water injections are the safest and best treatment for many affections of the ears, while oils and soothing ointments may do much to soften tympanums that have become too hard and stiff to vibrate. Placing the finger-tips firmly in the ears and wriggling them there is a good way of vibrating the drums, to loosen them, and holding the nose while forcing air from the lungs to the head tends to inflate the Eustachian tubes, and balance the air-pressure on both sides of the ear-drums. The latest device for loosening adherent ear-drums is an electrical instrument that causes them to vibrate very rapidly by sounds. The usual mechanical aids to hearing, various forms of ear-trumpets, are not as fashionable, convenient, or effective as the glasses used to aid defective vision; and although various instruments are largely advertised to cure deafness that can be almost concealed in the external canal, we never knew any of them to be worth the price. Human inventive ingenuity has not yet supplied the long-felt want of a satisfactory aid for impaired hearing, and since Edison has unusual genius for invention, the best equipped laboratory for experiment, and incentive enough to apply himself because of his own considerable deafness, we may conclude that it is a very difficult problem to solve—and yet perhaps not hopeless.

There are, however, many people going about using ear-trumpets or habitually holding a hand to the ear when in conversation with a friend or listening to an address who might be entirely cured of their deafness by constitutional treatment. Such persons have acquired defective hearing either through neglect, catarrh, or some blood impurity which has been treated upon in this essay. The fine mechanism of the ear, as must have already been seen by the reader, can be easily obstructed by the former; or the vitiated secretions resulting from the latter. I have had the satisfaction of radically curing quite a number of such cases. Any reader of this chapter who is affected with partial deafness is at liberty to write or call in person upon the author, no charge being made for such consultation and advice.

## CHAPTER XII.

### TREATMENT OF DISEASE.



IN this chapter of practical matter, will be thrown together, without any waste of labor in classification, suggestions of such importance to the invalid reader, that it is hoped every sentence will be perused with care and reflection. There are many truths, medical and moral, which the mists of ignorance, or popular prejudice, partly or wholly, shut out from the mental vision, and, inasmuch as the great mass of people know more of everything else than they do of that which pertains to the laws of physical and psychical health and life, and to a rational art of healing, it is not surprising that many dose themselves to death with their own uncertain concoctions; that thousands become the dupes of wicked charlatans; that tens of thousands allow themselves to become sewers for patent nostrums; and that millions are the patrons of a so-called scientific school of medicine, which cures (?) the sick by making them life-long cripples. I trust that a candid perusal of this chapter will serve to dispel these mists, or what might be properly called medical and moral fogs, for no harm can possibly result from an effort to impress upon the public mind the necessity of doing for the invalid the best that can be done at the very outset, instead of experimenting from week to week, and month to month, with something or somebody which or who it is thought "will do," until the disease-burdened body nearly sinks into the grave embalmed with a thousand drugs.

With this brief prologue I will pass to the presentation of matter appropriate for this chapter.

**Everybody His Own Doctor.**

This is an attractive motto which graces the title-page, or gleams from the preface of many a medical work gotten up for the patronage of a too credulous public. It would be no less pleasing to the author than to the reader, if, in this volume, instructions could be given, which would enable every invalid who peruses its pages, to treat his or her own case without the aid of a physician. Such a task, notwithstanding the assumptions of many to the contrary, would be simply impossible, as everyone of genuine good sense must perceive. So much depends upon the constitution or the temperament of the sick man or woman (see page 186), only one who makes these idiosyncrasies his constant study, is capable of prescribing successfully, especially in the thousands of cases in which there is a variety of blendings or mixtures of temperaments.

If my system of practice were at all similar to that of physicians who make calomel or some other drug a favorite remedy for every disease, with only an occasional deviation, the task of instructing non-professional readers in the healing art—if art, in that case, it could be called—would not only be possible but easy; or if my system was like that of medical men who have a *specific* for every ill, and who would treat a dozen patients afflicted with one kind of disease in precisely the same way, then would it be but a pleasant pastime to sit down and instruct the world's sufferers just how to doctor themselves. But the attentive reader cannot have failed to perceive that I entirely disapprove of treating the sick on this "hit or miss" principle, and insist on the necessity of prescribing, not only for disease, but for constitutions or temperaments. Never, yet, has there been written for popular use, medical books in which prescriptions or recipes were given for the ostensible purpose of enabling the sick to treat their own diseases, that did not prove failures, and in a majority of cases, worse than failures, for the reason that they led people requiring the best of medical skill and experience, to tamper with themselves till their diseases became incurable, or to employ active remedies (the nature of which they did not fully understand) when the complications contra-indicated their employment.

The chief aims of the author in placing this work before the public, are to give publicity to a volume of original ideas which he believes will be of advantage to the world; to exhibit to the reader the *causes* of disease and social unhappiness, in order that the rocks and shoals which lie hidden in the turbid sea of life may be avoided; to impart to those possessing ordinary intuition the ability to judge wisely of the merits of the various systems of therapeutics in vogue, and to put all on their



guard against—not only the unjust prejudices and old fogysm of the “regular practitioner,” but the impositions of the empiric. If I were writing this book for the exclusive use and benefit of the medical profession, it would be necessary to make it voluminous, expensive, and not a little obscure to the non-professional reader, for lengthy details in regard to the treatment of every case, with its many possible peculiarities and complications would have to be scrupulously given, the comprehension and appreciation of which would require the possession, on the part of the reader, of extensive pathological knowledge. I may yet make such a contribution to medical literature, but I doubt my ability to produce a work of this description, which would enable readers of little or no medical attainments, to act as their own physicians. Doctors will continue to be “necessary evils” till mankind for several generations, shall have strictly obeyed the laws of life and health ; or, in other words, until disease shall have become an annoyer and destroyer of only those who have passed temperately through the spring and summer of life, and entered the closing winter of their earthly career ; or, on the other hand, they will have to be endured until physiology, pathology, materia medica, hygiene, and surgery become household sciences, taught, not only in all institutions of learning, but in the nursery and family ; and then, as “practice makes perfect” in every art, profession, or trade, an invalid laboring under any difficult disease, would rather trust his case in the hands of one whose sole labors are devoted to the relief of the sick, than in the hands of an artist, a lawyer, a parson, a merchant, a mechanic, or a farmer, however devoted a student he may have been in matters pertaining to the healing art. If a man possesses the necessary attainments to practise medicine, every day's experience adds to his skill ; every case upon which he attends, the better prepares him for successfully managing the next, and while his success extends his practice, his practice, in turn, augments his skill. “Every man to his trade,” is an old adage, and in no sphere of life does it apply with greater force than to the physician.

None but those who are engaged in the practice of medicine with eyes and ears open, can realize how complicated are nearly all cases of chronic disease. Seldom is a single organ or function involved ; several affections usually coexist, each of which aggravates the other, and any one remedy, which is favorable to the cure of one, oftentimes gives disturbance to the rest. In no such case can a single prescription affect, favorably, these combinations ; nor can directions be laid down in a popular work, which will enable the invalid reader to go understandingly to work to concoct a set of prescriptions adapted to his particular case. But suppose such a plan practicable, then the adulterations practised in drugs and medicines would put to hazard the reputation of a popular author.

paring medicines are entirely changed. Some of the processes are original, so much so that the apothecary could not well prepare the remedies if the prescriptions were given. Aside from these considerations there are cases which require electricity in some form.

Inasmuch as many who read the common-sense theories advanced in this book will desire to avail themselves of the system of treatment they naturally suggest, I will say that if invalids at home or abroad (see Questions to Invalids, page 761,) will give me the opportunity of doing for them as each individual case seems to require, I can treat such as I may be willing to undertake with confidence of success. Invalids under my treatment are not restricted in diet or exercise; and those who are able to pursue their business, can do so without any interruption from the effects of the medicines, which will only the better enable them to follow successfully their vocations. This, to the business man, is an important consideration. Such being the debilitating effects of most things bearing the name of medicine, it is not singular that those who have a business or profession requiring their personal supervision, feel that they must live and suffer on till death ends their infirmities, rather than adopt any system of medication. My mode of treatment does away with this objection, for I do not "tear down to build up," nor are the medicines I administer usually unpleasant to the taste. I give *nutritious* instead of *drug* treatment.

#### Dietetics.

With regard to dietetics, I should perhaps remark that I do not mean by anything said in the closing portion of the foregoing essay that invalids can always eat just what a vitiated appetite may call for without injurious consequences. There are many kinds of food which only the strongest stomachs can digest, and these, it is palpable to every mind, should be avoided by the invalid, whether the digestive organs are impaired or not. But it would hardly seem necessary for a physician to advise an invalid to abstain from warm bread, mince-pies, rich pastries of every kind, pork, cucumbers, boiled cabbage, and such edibles as are doubtfully wholesome for healthy persons. My injunction to the sick is—*eat only such food as seems to agree with you, and that which distresses you, avoid.* Perhaps some dyspeptic will say: "Why, Doctor, all kinds of food distress me." To such I would reply, "You know something of the digestible qualities of the food set before you, and from it you must select that which is the most nutritious, and inflicts on your stomach the least disturbance." This is a good rule to observe, and may beneficially take the place of those starve-to-death dietetic prescriptions so often given by physicians of cranky proclivities. The system tottering under the burden of chronic disorders,



much more than the healthy body, needs nutrition, and nothing can be more foolish than to weaken the healing powers of Nature by the adoption of a system of starvation.

In Part I. of this volume will be found invaluable hygienic advice on "The Food We Eat," and on "The Liquids We Drink." To this advice I would refer the reader who wishes to choose intelligently between the multitudinous edibles and beverages usually found upon the table of the well-to-do American family or that of a popular hotel. Indeed, the hygiene of this volume upon all matters affecting the health and longevity of the human family, is more comprehensive than can be found in any other popular medical publication in this or any other country. Letters expressive of the greatest gratitude reach the author by every mail from readers who attribute their restored health to the reading and strict observance of the advice given in these pages. It is not an extravagant statement to say that thousands of readers of "Plain Home Talk" in America and throughout the civilized world have been restored to health without medicine by simply following the rules laid down in this volume regarding hygienic habits, and our files of letters will bear evidence of the entire truth of this assertion.

#### **Clear Conscience Better Than a Petted Stomach.**

It seems to me that those physicians who direct so particularly in regard to the taking care of the stomach, would do a better thing if they would take the same amount of pains to impress on those under their treatment the necessity of keeping the conscience clear. An overloaded stomach will not half so much depress the physical health as a sin-loaded conscience. I have already spoken in various portions of this book of the influence of the mind on the body, and it may be set down as an absolute fact, that if a sick man or woman is daily doing things which he or she believes to be wrong, the regrets which follow cannot fail to seriously aggravate whatever physical trouble may exist, while cheerfulness, or, at least, an undisturbed mind, greatly aids medicaments in affecting cures. If we may "laugh and grow fat," it is reasonable to suppose that by being at peace with ourselves, we may, with proper remedies to assist nature, find relief from bodily infirmities, if curable at all.

I may be asked, "What do you mean by a sin-loaded conscience?" I answer, a conscience harassed by the commission of acts which you believe or know to be wrong. I do not intend, in this place or in any other, to don the robe of a theologian. I am a physiologist and physician, very little acquainted with theology. This volume will undoubtedly fall into the hands of Protestants, Catholics, Swedenborgians, Theosophists, Spiritualists, Jews, Mormons, Deists, Atheists, Panthe-

ists, and it may possibly be read by Mohammedans, Simonians, Supralapsarians, and may not impossibly find readers among the Jumpers, Whippers, Diggers, and others of the more eccentric class of religionists. Hence it would be useless to require my patients to conform to any particular standard of morals or creed in religion; but I can, without questioning the correctness of any one's religious opinions, insist on their living up fully to their highest conceptions of right; to their living at peace with themselves and the inward monitor. Though an act may not, in itself, be wrong, it should not be committed by one who *thinks* it wrong, for not only does unhappiness follow in the wake of such conduct, but the effect on the moral sense is precisely as bad as if it were an actual wrong, and it opens the way for the perpetration of the latter. In other words, persons may become heedless of the dictates of conscience by doing what they think they ought not to do, and in the end, actual as well as supposed sins are committed, while in either case remorse usually succeeds, and depresses the physical energies no less than the mental complacency. It is therefore properly within the province of a physician to insist on correct moral deportment on the part of the patient, as well as to direct in regard to diet, doses, etc.

I am often told by invalids consulting me, that they are distressed with doubts on religious subjects. Now, there is no good reason why any person should keep his mind in painful commotion because he cannot square his faith and belief with that of his neighbor. So long as people's brains differ in shape and size, so long will it be difficult for them to think alike, and no one should allow himself to become distressed because he cannot put on his neighbor's opinions any more than he should weep because he cannot put on his neighbor's hat, coat, and boots. To all such I say, live true to yourselves and the light you possess. Do just as you think you ought to do. Cultivate your understanding and your conscience, and be guided by both. If at any time you doubt the correctness of any opinion or creed you have long cherished, investigate cheerfully and carefully and, if a Christian, prayerfully, but not painfully and impatiently; then leave the result with a merciful Providence.

It is really more important that the mind of a patient should be free from distress than that the stomach should be free from the presence of unwholesome food. A sin-loaded conscience has brought many a stalwart man upon a sick-bed, and it is useless to try to conceal the fact that it preys heavily on the remaining energies of the sick. I have thought proper, in another part of this volume, to present an essay on "Violating the Moral Nature," for the purpose of showing the effects of outrages of the moral sense on the nervous and vascular systems, for as the inner suffers with the outer man by the violation of physical

laws, so does the outer suffer with the inner man by the violation of moral laws.

With this view of the matter I would say to my patients, be just as particular in not overloading or offending your conscience as in not overloading or offending your stomachs. I cannot tell you just what you can or must believe; neither can I tell you just what you can or must eat. I can confidently assure you that you must not lie, cheat, steal, nor murder; that you should not eat warm bread, rich pastries, nor shingle nails; but there are thousands of practices which you may or may not pursue, according to the condition of your consciences and stomachs that may or may not inflict physical pain. As your physician—not your parson—I advise you to *do nothing you believe to be wrong; eat nothing which seems to distress you.* So far as a life of honesty is concerned, I advise no one to live so, merely because honesty is the best policy.

### Warranting Cures.

The question is often asked me: "Will you warrant a cure?" In order that those who read these pages may understand my position on this point without interrogating me, I reply to this question emphatically *no*. Invalids must remember that they have as much to do, and often more, in effecting cures in their cases, than the physician. Medicine must be used with *regularity*, and general directions strictly observed to insure success, and it is not reasonable, therefore, to ask the physician to shoulder the whole responsibility. However skilful a physician may be, however adapted his medicines to any particular case, however wise his hygienic advice, unless the patient does his or her part faithfully, treatment never so appropriate, never so skilful, may prove abortive. As well might a man carrying one end of a stick of timber ask his companion at the other end if he would warrant the stick not to drop. The latter would doubtless reply: "I can only speak for my end."

Those who are disposed to employ me may rest assured of one thing, viz.: that I shall not hazard my reputation, gained at the expense of close application and years of toil, by giving any unwarrantable encouragement or uncandid diagnosis. The course I have pursued has been strictly in accordance with this principle, and I shall not, under any circumstances, in the future pursue any other. I may not, in *all* cases, be as successful as I at first expect, but I will guarantee that I will cure as large a percentage of my patients after they have been given up by old-school practitioners, as the most successful of allopathic doctors do in treating cases *first presented to them*, many of which are neither difficult nor complicated. Nearly all becoming my patients have been under the treatment of five to twenty different physicians

before employing my services, and I now invite the most obstinate and intractable cases to consult me, for it is my ambition to rescue the most hopeless cases from the grasp of disease. Ordinary cases can be cured by ordinary remedies. Every town must have its physicians; as before remarked, they are "necessary evils," and I will not utter a word to their disparagement, if they do not poison their patients with pernicious drugs and mineral preparations. I only invite the consultations of those who have failed to find relief under their treatment. In such cases I find in disease a foe I delight to combat, and a keen satisfaction when I find I have conquered.

### To Consultants.

Those at a distance, who wish to avail themselves of my services need not hesitate because of their inability to visit me. I have treated, successfully, patients in all the States and settled Territories of the United States, and in all the civilized countries of the world. Send answers to the following questions, and I can judge correctly of your diseases and temperaments. Those who prefer to indemnify me in slight measure for my time and trouble in examining their cases, can enclose a fee of one dollar, and those who do not, need simply enclose a letter stamp with which to reply. All readers and especially all purchasers of this volume are entitled to a reply to any question which may arise in their minds while perusing its pages.

Answers to the following questions will enable me to judge nearly, if not quite, as correctly of the nature and extent of a disease as a personal examination. Many of the questions pertaining to complexion, height, weight, measure, etc., may appear, at first sight, trifling, but they are of *first importance*, because on answers to these I must depend in forming my opinion of the *temperament* of one whom I am not permitted to see; therefore, no one should pass over them in describing his or her case. When perfectly convenient to do so, in addition to the answers to the questions, a photograph may be sent with the letter. Many invalids at a distance pursue this plan in consulting me, and, although it is by no means important, something may occasionally be gained by the patient doing so. All may safely confide in the author in describing fully and frankly a case, or giving the result of treatment. I am daily in receipt of letters from patients giving the most gratifying accounts of the effects experienced in pursuing my advice, and which, if published, would greatly redound to my credit, but I never publish any letter or parts of letters, with the name of the author, *unless his or her consent has been expressly given*, and even then, but seldom, as the good results of my practice are quite too well known to need any evidence of this kind.

**List of Questions.**

In answering, correspondents need not say they are *not* troubled with this, that, or the other difficulty, but *mention only the symptoms they have*, as they look over the questions one by one. Correspondents are also requested not to simply say Yes or No, after putting down the figures before each set of questions, but state the symptoms fully. Write plainly, and with ink, if possible.

What is your name? What is the name of your post-office? County? What State? To what office should express packages be sent? By what express company? Have you previously written regarding your health? If so, when? Have you the book entitled, "Evidences of Dr. Foote's Success?".....1st. What is the color of your hair? Eyes? What your complexion? Age? Height? Weight? Ever weighed more?.....2d. Is your skin soft and moist, or rough and dry? Is it sallow?.....3d. Parents living? If so, at what age? If dead, of what did they die? Any hereditary disease in your family? Any disease common in it?.....4th. Are you affected with melancholy, or the "blues?" Any trouble of the mind? If so, what causes it? Have you ever had fits or spasmodic difficulties? Have you ever been badly frightened? What is your occupation? Ever overtaxed your mind with study or business? Are you troubled with loss of memory? Do you sleep well? Any disagreeable or amorous dreams? If wakeful, at what time of night? Are you drowsy during the day?.....5th. Have you any deformity, by birth or accident? Ever been injured by an accident? Any pimples, salt-rheum, ulcers, boils, cancer, or eruptions? Been vaccinated? Did it produce any unusual soreness? Ever been poisoned internally or externally? Ever taken mercurial medicine? Have you any tumors or swellings? If so, what and where? Are you ruptured? Any lumps about the groin or navel? If so, do they disappear when you lie down? Or protrude more on sneezing or straining? Do you feel strong or weak in body? How far can you walk? Is your flesh firm or soft and flabby? Do you like exercise or avoid it? Are your hands and feet warm or cold? Are they moist, dry, or hot at times?.....6th. As to your daily habits: Are you regular to bed? How many hours sleep do you get? Do you use stimulants? Tea or coffee (how often)? Do you use tobacco in any form? Opium, or other narcotic? Do you eat much meat? Pork? Or rich pastries, pickles, condiments? Have you injured yourself by any bad habit?.....7th. Any trouble in the head: Headache, pains, neuralgia, in the top, front, back, or side of the head? Any

dizzy sensations ? Rush of blood to the head ? Heavy oppressed feelings ? Any excess of mucous discharges from the nose or throat (catarrh) ? .....8th. Have you weak or inflamed eyes ? Any dulness or fault of vision ? Stars, specks, or streaks floating before the sight ? Clouds or mists ? Any twitching of the lids ? Pains in the eyeballs ? Gumming during sleep ? .....9th. Any trouble about the ears ? Defective hearing ? Roaring or singing ? Earache ? Discharges ? Excess of wax ? Dryness ? .....10th. Is the tongue coated ? All over ? White or yellow ? Any small red points, pimples, deep furrows, or wrinkles on the tongue ? .....11th. Any trouble in the mouth ? Diseased teeth or gums ? False or filled teeth ? Canker in the mouth ? Dryness ? Excessive moisture ? Bad taste ? Bad breath ? .....12th. Any affection of the throat ? Irritation, discharge, hawking, tickling, soreness ? Choking sensations ? Hoarseness or weakness of the voice ? Enlarged tonsils ? .....13th. Do you take cold easily ? Where is it likely to affect you ? .....14th. Any symptoms affecting the lungs ? Dry or loose cough ? Nights or mornings ? What is your chest measure in inches, under the arms, with full breath ? Without ? What is the number per minute of your pulse when lying down ? Sitting ? Standing ? Any tenderness, pain, soreness, constrictions, or weakness about the chest ? Do you raise matter from the lungs ? Does it sink in water ? Is it yellow, chunky ? Is it streaked with blood ? Did you ever raise blood ? How often ? Are you short of breath on slight exertion ? Do you have swelled ankles ? Chills during the day ? Night-sweats ? Flushed face afternoons ? Have you had pneumonia, or any serious fever ? Fever and ague ? .....15th. Have you palpitation of the heart ? Pains or soreness about the heart ? Any unusual or disagreeable sensation there ? Sense of stoppage ? .....16th. Have you dyspepsia, heaviness, soreness, gnawing, burning or pain in the stomach ? Any sourness, wind, trembling, nausea, or sickness ? Is the appetite good, poor, variable, or voracious ? Are you, or have you been, careless about what or when you eat ? .....17th. Do the bowels move regularly ? One or more times daily ? Easily or not ? Is there any bloating, tenderness on pressure, or griping ? Have you piles ? External or internal ? Itching or bleeding ? Have you fistula ? .....18th. Have you weakness, pain, soreness, or lameness across the lower part of the back ? Pain or uneasy feeling in the lower part of the bowels, over the bladder ? Do you pass water often ? Much or little at a time ? Any pain or smarting ? Is there much smarting ? Is there much sediment ? Red, white, brown, yellow or gritty ? Is there any unusual color or deposit in the urine ? Any blood or gravel ? Have you had any venereal disease ? If so, what and when, and how long ? .....19th. Do you have pains, weakness, soreness, numbness, or other disagreeable sensation in any part of your body not mentioned



already?.....20th. Are you married? Ever been? Have you children? Are they healthy? If married and without children, do you desire them? Is husband or wife sterile? If children are desired, describe eyes, hair, complexion, height, weight, age of both parties, stating how many years married, and give all the information you can think of as important in enabling a physician to ascertain the cause of unfruitfulness on a separate sheet of paper. Have you read the chapter on "Local Inadaptation" in "Plain Home Talk," and studied Figs. 207 and 208?.....21st. Do you have involuntary seminal emissions day or night? How many during a month at night? How often and when during the day? Do you know the first or real cause? Are there any casual, direct, or present causes? Is your sexual power impaired? If married, is the seminal discharge premature? Did you have losses before marriage? Are your testicles diminished, wasted, swollen, enlarged, aching, tender? Is there any feeling as of a bunch of earthworms in the scrotum (varicocele)?.....22d. If a female, are you troubled with leucorrhœa or whites? Continually or occasionally? Have you bearing down or dragging feeling in the region of the womb? Have physicians told you that the womb is falling down, back, or forward? Is intercourse painful? Are you sexually apathetic? Are the periods regular? How many days do they continue? Is there any pain before, after, or during the flow? Or other derangement? Is the quantity about right, slight, or profuse? Do you have soreness, irritation, smarting, or itching in the vagina? Have you ever had miscarriages? If so, how many, and at what period of pregnancy? Were the causes accidental, medical, or surgical?.....23d. Is your place of residence considered healthful? Answer unreservedly, for as has been repeatedly said in the pages of this volume, everything revealed to an honorable physician is treated with strictest confidence.

#### Evidences of the Curability of Chronic Diseases.

In presenting the following evidences of the curability of chronic diseases, the author begs the indulgence of his readers while offering a few explanations:

1st—These evidences are presented for the two-fold purpose of showing what can be accomplished by what has been termed "Common Sense Remedies," in Chapter IV. of Part I., and to inspire those who have lost confidence in most of the medical pathies, if not all, with new hope, and a fresh determination to renew the life forces for one more struggle with the enemy which has bound them in a state of chronic invalidism. As I think I have said elsewhere in this volume, *Nature* really has to do the work of restoration. Physicians can cure

no one. They can only furnish the means with which Nature recoups herself for the battle, and those agents which can the most effectually rally the vital forces for the fray are the true allies of what is called the *vix medicatrix natura*, which, as defined by the lexicographer, is "the capability of living tissue, animal or vegetable, to remedy or remove disease or repair injuries inflicted upon it." What a skilled gardener is to a place set apart for flowers, vegetables, or fruit, the physician should be in a community where illness of any description prevails. After having perused the pages of "Plain Home Talk" thus far, the reader might naturally remark: "Your theories, Doctor, look quite plausible, but how do they work in practice?" Hence, it would not seem out of place to present in the closing pages of Part II. a few evidences of their practical value, and if the reader would like a pamphlet with eighty pages—each page about four times the size of this one—well filled with them, it will be mailed free on application.

2d—The signatures of the writers are omitted from the extracts of letters in compliance with a standing promise, made at the very beginning of my practice, and repeated in every edition of this book, that the names of all correspondents and patients should in no case be mentioned without their declared consent; this rule appertains to all patients, whether they consult me by letter or in person. The affidavit of their genuineness should however compensate for the omission of signatures.

3d—As it has been contrary to my practice to ask testimonials, and with few exceptions to accept and publish them when proffered, the following are wholly from patients at a distance who have consulted me by letter; but if difficult chronic diseases may be cured when the patient receives treatment by letter and express, they certainly may be under the personal care of a physician, with the advantage of frequent interviews. The reader will undoubtedly regard the former the greater triumph; I can hardly say that I do, as my practice in the treatment of diseases at a distance is reduced to such a system by the aid of a carefully prepared list of questions, and by registers in which each case is carefully minuted with reference to symptoms, and to remedies dispensed, that consultations by letter are usually entirely satisfactory and successful.

4th—An extract detached from the body of a letter is often less expressive of satisfaction and gratitude than the letter would be if presented in full; but room can only be spared for a brief quotation from each, and manifestations of thankfulness and joy on being relieved, or of seeing a prospect of cure, are necessarily in most cases omitted.

5th—Nevertheless, these testimonials are of more value than they would be if they were obtained by solicitation, because, as they now appear, they possess the spontaneous acknowledgments of grateful

## EVIDENCES OF CURABILITY OF CHRONIC DISEASE. 765

patients who have been benefited or cured. When they have come in answer to a letter of inquiry they can hardly be called testimonials obtained by solicitation, for, if a patient does not report upon the results of treatment we naturally ask for a report. Interest in the case prompts us to do this.

6th—The quotations from letters have been hastily collected, consequently they present cases in all stages of treatment; some just beginning, others further advanced; and still others at the close. My first impulse was to present only cured cases; but on reflection I think my readers will be more interested in the expressions of patients in all stages of treatment, just as their letters reach me from day to day. This course will also save time in collating the matter to be presented.

7th—As nearly as I can, without taking too much time and trouble in selecting them, I shall give quotations from letters representing a variety of diseases; but want of time will prevent me from making the variety successfully treated as extensive as my files of letters would afford if fully examined.

### AFFIDAVITS OF THE DRS. FOOTE.

STATE OF NEW YORK, }  
COUNTY OF NEW YORK, } To wit:

Edward B. Foote, E. B. Foote, Jr., and Hubert T. Foote, of the City of New York, of the County aforesaid, being duly sworn, say that the extracts of letters regarding the success of their medical practice contained in this volume and other publications issued by them, are genuine quotations of letters from their patients or from those attending upon them, and that all extracts from letters from those endorsing their publications or commending their remedies, are also genuine quotations taken from testimonials received by them; and further, that such letters are but a few samples of the many that are constantly coming to them by mail from all parts of the United States, and from foreign lands.

EDWARD B. FOOTE, M.D.

E. B. FOOTE, JR., M.D.

H. T. FOOTE, M.D.

Sworn to before me this 23d day of July, in the year 1900.

D. SYLVAN CRAKAW, Notary Public, 84,  
New York County.

## CASES OF DISEASES OF THE BREATHING ORGANS.

CASE 73,212.—*Catarrh of long standing in a woman sixty-nine years of age, whose general health was much impaired.*

She writes from Cambridgeport, Mass.: "Yours of October 27th is at hand. I have often thought I would write to you, acknowledging the wonderful cure I received from your skilful treatment. I think I can safely say that I am entirely cured of that terrible trouble for which you treated me. When I last wrote you I was improving slowly, but had not fully recovered, when in March, my husband died. So you see that I have been all broken up since, and more than that, had lost your address. Since then I have buried three sisters and a sister's husband. At the present time I am quite well."

CASE 100,120.—*Incipient Consumption in a young woman whose parents and two sisters died of this disease.*

She writes from Worcester County, Mass., Oct. 9, 1899, as follows: "In reply to your letter I am happy to say that at the present time I am enjoying perfect health, thanks to your treatment, and rest and care of myself on my own part. I am feeling better at the present time than I have for years."

CASE 92,101.—*Catarrh, Dyspepsia, Constipation, and Neuralgia.*

A lady living at Locke Mills, Me., writes: "Your kind letter of the 30th inst. received. In regard to my health I have been better this spring than for many years and I know it is owing to the treatment I received from you last spring. Was glad to hear from you and I thank you for your kindness. I can never say too much in praise of Dr. Foote."

CASE 73,199.—*Chronic Bronchitis, Constipation, etc.*

A gentleman writing from Montrose, Wis., says: "Your letter of late date in hand, and in reply will say that the two months' treatment has done me a great deal of good. I now feel strong and healthy, and do not think I will need any more medicine at present, but should I ever fall in health again I will look to you for help as I have before. Allow me to heartily thank you for what you have done for me and may the blessings of God go with you now and forever is my sacred wish."

CASE 92,162.—*Catarrh affecting nasal passages, throat, and bronchi; Neurasthenia, and Rheumatism of long standing.*

A middle-aged man writes from Fort Walla Walla, State of Washington, as follows: "Your kind letter and medicine of last month came duly to hand. I do not think that I will need any more medicine as *I feel better now than I did for ten years*, in fact I am a different man; see things in a different light, all owing to your treatment. I shall take your advice in regard to marrying very soon. You have in nine months accomplished what others failed in for three years, and whenever I get the opportunity will not fail to advise others, and tell them what you have done for me. Nine months ago life was a burden to me and I did not care how soon it would end; *now everything is changed; I feel like a young man of twenty*; feel cheerful; no more gloomy thoughts; but look in the future with cheerfulness and hope, with a fearlessness not known to me for years. Thanking you kindly for your always generous advice and good treatment believe me, *always grateful.*"

## CASES OF DISEASES OF THE DIGESTIVE ORGANS.

CASE 79,124.—*Dyspepsia, Nervous Irritability, and Spermatorrhœa.*

A gentleman writes from Fruitland, St. John's River, Fla.: "Your letter of the 9th of February last was duly received. I did not answer it right away, as I wanted to see what improvement there was without the use of the remedies. I am glad to say that the improvement is great, and somewhat beyond my expectations, and I shall never regret that I placed myself in your hands. My friends tell me I am looking much better than I used to. I firmly believe that it is entirely due to the remedies you sent me. Always wishing you success in your profession," etc.

CASE 94,172.—*Dyspepsia and Catarrh following early sexual indiscretions.*

A middle-aged man writing from Allen County, Ohio, says: "Yours of late date received. I have medicine for about ten days yet. You know I wrote you that the last medicine was delayed quite considerably. \* \* \* I am so much improved that I think it not necessary to continue treatment any longer. My appetite is splendid and my digestion apparently perfect. There seems to be no fermentation in the bowels at all any more. I am quite strong in muscle and in nerve. I am quite hopeful as to my condition in every respect. Am grateful for the valuable aid received at your hands."

CASE 70,149.—*Dyspepsia, Constipation, and Piles.*

A lady writing from Phoenix, Ariz., says: "Yours of October 21st at hand. Many thanks for the kindly interest you take in me. I am thankful to say that at last I feel as if I were quite well again. Two months ago I had a sharp attack of the piles, and up to six weeks ago I had nearly always the tongue dry and stiff on awakening. Now all those symptoms have disappeared as if by magic. I relish a chop in the morning at breakfast. Before, I used often to go until dinner-time without eating. I think your medicine has marvellously strengthened my digestive organs. So, dear Doctor, I think I may enroll myself as one other added to your large list of relieved sufferers. In the meantime, pray accept my most grateful thanks for your kind care of and attention to me during the last eight months."

CASE 61,010.—*Bad Fistula in a Scrofulous woman suffering from Dyspepsia, Constipation, etc.*

She writes from Berkeley County, W. Va.: "I think I have good news to tell you this time. My health has improved more since I last wrote you than it has in the same length of time since I have been under your treatment. I weighed 135 pounds two months ago, and still improve rapidly. My cheeks are as rosy as can be, and I never felt so fresh and buoyant as now. That fistula on the left side has all been healed since November. The one on the right side has been healed since May. I never expected it to heal like that. I feel so much better every way since they are healed. I am not nervous, my memory is better, and I am so much stronger. Everyone thinks it is wonderful, the way I improve. \* \* \* I know, Doctor, if it had not been for you, I should have been dead long ago. I am sure God sent me to you. My husband says the best thing he ever did was to put me under your treatment."

CASE 90,908.—*Dyspepsia, Catarrh, and Spermatorrhæa.*

A gentleman writes from Burdette, N. Y., as follows: "I have been married since June 31st. I am delighted to say that despite all difficulties your medicine has effected a cure of all debility in my case. My memory is not what it was, but is slowly improving. I feel as strong as a bull physically and otherwise. Such physicians as you are a blessing. I cannot express my thanks fervently enough for your painstaking care. My health is excellent; I weigh 170 pounds, and it looks as if I might begin having a family in two or three months."

CASE 74,218.—*Dyspepsia, Constipation, and Piles.*

A gentleman writes from Tourtelotte, Col.: "Your favor of the 16th inst. at hand, and contents noted. It was very kind of you to remember and take interest in me, your former patient. With the greatest pleasure I answer your letter. I admire honesty of purpose and integrity, because I should judge it is a plant of rare growth, especially in your profession. My last letter I think will say that I was not entirely cured. Since then I took a two months' supply of your son's tablets, Nos. 5 and 7. Once in awhile I have a touch of the old enemy, not often nor severe. Aside from that I am more vigorous, both mentally and physically, than ever before in my whole existence. I don't say this without long and deliberate meditation, nor because some one else said it. It must be remembered that I labor under disadvantages—obliged in my present occupation to disregard laws of health well known to me. It would avail nothing to wash clothes and throw them into the mud. Working in a silver mine, often in bad air loaded down with carbonic-acid gas and powder-smoke of the giant class, is a drawback, especially for one better suited for clerical work. So far as I can, I recommend you to my friends and acquaintances."

## CASES OF NERVOUS DISEASE.

CASE 100,080.—*Neurasthenia, Diarrhæa, Piles, etc.*

A middle-aged lady writes from Sheboygan, Wis.: "I received your letter some time ago, and was glad to hear from you. You ask how I am feeling. To tell the truth, I am feeling well, and I have taken no medicine since I took yours, and I do not forget to speak of it to a great many of my friends. Naturally I am an early riser, and am up at five or half-past five o'clock every morning. If you remember, last summer, I was afraid to get up early, such a feeling of fear would come over me that the day would be too long, and so I would lie an hour or more longer, and after dinner would take a nap; but this summer I have got up at four o'clock and am feeling well. I am feeling nervous but very little, and so find it unnecessary to take any medicine. My sister is feeling quite well, and she has taken no medicine since she took yours. So I think we are doing well, and seem favored in regard to health. I am sure no medicine could have helped me like yours, for which I am very thankful. If you could see me this summer and compare me with last summer, you would see a well person. Perhaps the thought of knowing you are where I can get help at any time keeps me well. At any rate, I am more than happy in my present condition. Would be glad to hear from you again."

CASE 92,230.—*Nervous Prostration, Sexual Weakness, etc.*

A gentleman writes from Baltimore, Md.: "The medicines are all gone, and I can truthfully state, without any hesitation whatever on my part, that your treat-



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ment was most wonderfully effective. When I began, I was very nearly a wreck so far as my nervous system was concerned, and had tried two or three doctors without receiving any benefit. I then thought of trying you, which I did. You stated that it might take me six or eight months to build up. I placed myself in your charge. Only used four months of treatment, with the result that to-day I feel ten thousand times better; have gained in flesh, don't trouble my brain about my health, for I don't think anyone could improve on that. Now I owe all this improvement to you, through your skilful treatment, and to any of my friends who are in need of strictly first-class medical advice, I recommend you, no matter what the ailment may be."

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CASE 60,111.—*Case of "Railroad Spine," from accident, with inability to move about, Nervous Headaches, etc.*

A gentleman writes from Concord Church, W. Va.: "Since I took your treatment I have had very good health. Have done more hard work than most anyone else I know of. Can walk thirty to forty miles per day over our rough mountains. Have been Deputy U. S. Marshal for about five years, and have done more work than any deputy in West Virginia. Delivered forty-seven U. S. prisoners to our Federal Court in one 'gang.'"

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CASE 81,236.—*Spinal Irritation, with peculiarly distressing symptoms. Reports progress after only two months' treatment.*

A gentleman writes from Bridgeport, Ct.: "I feel much better in every way, especially the tenderness in my back. I don't know as I will try any more of your treatment just at present, but I can say now and here that I believe it was your treatment that saved my life."

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CASE 68,131.—*Paralysis of sixteen years' standing, following childbirth.*

After two months' treatment a lady writes from Danbury, Conn.: "The second box received. I begin to feel the effects of the second course of treatment. I did not think it possible that I could feel so much better in so short a time. I feel quite encouraged, so much so that I must write you. It must be very pleasant to you to hear good reports from your patients. The muscles of my side used to be so soft that I could not bear to try to use them. They felt as if they were tired. They are more limber. I use them every time I can."

A year later this patient writes: "Yours received. I have been out of medicine for some time. I don't think I will take any more now as I am so much better. My general health is good. The use of my limbs depends on myself. I find the more I use them, the more I can. I take exercise with light dumb-bells no longer than five minutes at a time, and rest afterwards. The muscles must be exercised and trained to use. You can see my will must be stronger to force the muscles to work. If I feel that I need more treatment you will be the one I will call upon."

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CASES OF DISEASES OF THE URINARY ORGANS.

CASE 68,043.—*Cystitis in young woman, attended with marked Nervous Irritability, and Bed-wetting and Neuralgia.*

She writes from Garrett, Ind.: "No doubt you will remember me as one of your patients about a year ago. Indeed, I have come to forever remember you, for

you succeeded in curing me of a disease of the urinary organs which was the greatest relief on earth to me."

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CASE 46,246.—*Bright's Disease, showing Dropsy, advanced symptoms, cured during 1877.*

Patient writes April 19, 1885: "I am still in good health; no change for the worse that I am conscious of. In July last I passed a very rigid examination for admittance to the American Legion of Honor, an organization incorporated for a system of life insurance. All I can remember of the condition of the urine was 'specific gravity, 1030, alkaline.' You may gather something from that as to what the condition was. Wishing you continued success in your profession, and a long and happy life, I am," etc.

The same gentleman writes from Bridgeport, Conn., under date of September 1, 1899, as follows: "My Dear Doctor—I write this to enclose with list of answers to be forwarded to you by my son-in-law who seems to me to be a fit subject for your skilful treatment. I bespeak for him your thorough examination of his case. I take pleasure to inform you that I am still in good health, 51 years of age, and a grandfather. Thanking you for all you have done for me, and feeling confident that you can benefit my son-in-law equally as much, I remain," etc.

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#### ANOTHER CASE OF BRIGHT'S DISEASE.

A gentleman writing from Momence, Ill., to the Murray Hill Publishing Co., says: "If you will mail me a copy of 'Plain Home Talk' I will prize it very highly and keep it in my shop. I have seen the book and have wanted one, but did not know the address. I owe my lifelong gratitude to Dr. Foote and his book, as he cured my mother of *long-standing Bright's disease* when all local doctors gave her up. Now she is as well as ever."

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CASE 92,036.—*Cystitis, passing pus in urine, vital organs all impaired, greatly reduced physically, coughing badly and expectorating profusely.*

A well-known writer and lecturer on the Pacific coast writes: "I feel like a new man with at least twenty years of a useful future before me. When I think how I was a year ago, going down daily until I could not walk without reeling, alone and uncared for, and through your skill and kindness I am again well, strong, and happy, I feel like praising Drs. Foote 'from whom all (these) blessings flow.' I have not been so free for twenty years from troubles in my head, stomach, lungs, liver, bowels, etc. *Your medicines are certainly great rejuvenators, and I am sure saved my life,* and worked out the poisons that were making life a hell for me. \* \* \* My wife and myself will always recommend your publications, and urge the sick and suffering to apply to you for help."

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#### CASES OF DISEASES OF MEN.

CASE 101,148.—*Spermatorrhæa with marked Nervous symptoms, Dyspepsia and Bronchial Catarrh.*

A gentleman writes from Lancashire, England: "I beg to acknowledge the receipt of your letter of the 20th inst., and I regard it as extremely good on your part to be anxious about my cure. It is exceedingly gratifying to know that one has been under the care of a gentleman as well as a doctor. With regard to my condition I beg to state that I consider myself fully cured. I might be guilty of jumping at conclusions, but I can state without exaggerating anything that I

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never felt better in my life, to my knowledge, and I have decided to try my luck without further treatment at present. My weight, Doctor, is  $9\frac{1}{4}$  pounds heavier than it was three months ago. It is 11 stone,  $13\frac{1}{4}$  pounds, nearly 12 stone. Now I eat and sleep well. My friends say I look a lot better. Of course I do not care to tell them that I was under your care. I showed them your 'Plain Home Talk' book, and one old gentleman remarked that the man who wrote that book was no duffer. He said, 'I have heard about Dr. Foote before, and I believe he is a clever man.' "

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CASE 98,166.—*Self-abuse, with considerable constitutional disturbance and Varicocele.*

A gentleman writes from Gaylordsville, Conn.: "Yours of the 28th inst. received. I finished my last course of treatment some time ago, and am able to say that I now feel better than I ever did in my life. I have not once fallen into my previous bad habit since I began taking your treatment, and I hope I am entirely cured. The varicocele does not trouble me as much as it did. Thanking you for your interest in my case, I remain," etc.

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CASE 102,035.—*Spermatorrhœa; seminal losses almost every night, these having occurred for nine years, general health greatly reduced.*

An officer in the government service in New South Wales, Australia, writes:—"I have much pleasure in enclosing post-office order for another two months' course of treatment. I heartily appreciate the kind advice in your last letter, and also the kind interest you have taken in my welfare. The exhausting nightly losses I used to undergo have almost disappeared. In spite of the irregularity of the mails, etc., and the unhealthy surroundings, I am making rapid progress toward health. You see, Doctor, the unfavorable conditions I am living under are unavoidable. It reflects great credit on your mode of treatment. I am improving so rapidly that I can hardly comprehend it. The daily troubles of life which I used to chafe under, have flown away from me as chaff before the wind. Life is a great and glorious pleasure to me now, when it used to be a burden. You have more than saved my life. I shudder when I look back on the suffering I endured through the maltreatment at the hands of unscrupulous quacks with which Sidney abounds. I bless the day your book came into my hands. I shall always celebrate the anniversary of that day while I live. Hoping to be able to visit New York some time in the near future, and personally thank you for all you have done for me, and with best wishes for your health and happiness, yours gratefully," etc.

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CASE 42,143.—*Spermatorrhœa.*

An officer in the English Navy writes from Devonport, England: "I received your letter some months ago, and you requested me to write you after finishing a course of remedies. I finished them about the end of February and was married the 21st of last month. I might say that they made me a changed man. I am strong and vigorous and look the picture of health, and I live according to your suggestions in your valuable book."

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CASE 90,024.—*Impotency, Constipation, and Catarrh.*

A gentleman writes from Kinderhook, N. Y.: "In reply to yours of the 25th, would say that I am now married nearly a year, and that your treatment restored me completely. I am almost cured of the constipation habit, and on the whole I owe you a debt of gratitude which I cannot repay."

CASE 97,018.—*Spermatorrhœa of long standing and Phimosis.*

A gentleman of middle age, who had previously doctored many years without success, writes from Bangor, Me.: "Your favor of the 25th received. I can say that I have continued to enjoy fairly good health during the past year, perhaps as good as I could expect, considering constitutional holdbacks, and the fact that I am still doing night work. I should add that I have been married for some time, and am very well satisfied. Perhaps it would be well to consider my case closed on your records, though if in future I should require special medical assistance, I should feel confident in calling upon you again. The phimosis was completely cured by your instrument, although it took a good deal longer than I anticipated. I have, however, no reason to complain."

CASE 71,042.—*Spermatorrhœa, and sympathetic nervous disturbance.*

A gentleman writes four years after treatment from Whiteport, N. Y.: "In reply to yours of the 1st, would say that I am enjoying excellent health at present, and ever since I stopped treatment with you, for which words fail to express my gratitude, I can work harder, feel stronger, eat anything, sleep sound and refreshing. Rest assured should I require the services of a physician, I would immediately apply to you for relief and recommend others as well. Wishing you abundant success and prosperity, which you so richly deserve, I remain," etc.

Five years later this same gentleman writes: "In answer to your letter of the 22d inst. would say that at the present time I am enjoying the best of health. I highly appreciate the benefit derived from your treatment, and can say I have improved 100 per cent., physically and mentally. If an occasion arises that I require your services, will give you a call."

CASE 101,148.—*Spermatorrhœa, weak physically, Dyspepsia, Constipation, and Chronic Bronchitis.*

A gentleman writes from Lancashire, England, as follows: "I beg to acknowledge the receipt of your letter some time ago. I thought I would wait awhile and see if my cure were permanent, and to-day I can say that it is. I am positively sure that I am cured. I would not have that dread disease on me again for any amount of money. I am very thankful to you, Dr. Foote, for curing me, and if ever I suffer from any disease again of any consequence or chronic form, I will certainly seek your advice. I never eat any food of a heavy character or take any intoxicating drink of any kind since I commenced treatment, but I think I may eat more freely now, as I feel strong enough to digest anything. I still follow bathing. I thank you once again, Doctor, for curing me, for I feel healthy and happy now. Yes, the best I ever did in my life. Money is nothing to health like this. I will conclude for the present, but will remember you to my last day."

CASE 101,064.—*Sexual Atrophy, resulting from Self-abuse.*

A gentleman in County Cork, Ireland, writes: "My reason for not writing to you sooner was to see would any of the disagreeable symptoms return after I ceased taking your medicine. I am glad to say I am completely cured after taking your invaluable medicine according to your directions. May you be long spared by Providence to preside over the noble work you so successfully accomplish."

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CASE 102,095.—*Self-Abuse, much Nervous Depression, Dyspepsia, and Constipation.*

A gentleman approaching 30 years of age, after four months' treatment, writes from Akron, Ohio: "Your letter of the 25th of July duly received. I know it has been some time since I wrote you last, but I intended to use all the medicine before making my final report. I have some tablets of No. 4 left yet. I can say that my condition has much improved under your care, and do not think I will need any more medicine. The pimples are much better, and I have good control of my sexual organs."

### CASES OF DISEASES OF WOMEN.

CASE 100,109.—*Uterine Weakness, Poor Elimination, Impure Blood, and Marked Anæmia.*

A young lady writes from Anawan, Ill.: "I think it is my duty to write you to let you know how well I am. Doctor, you ought to see me; I wish you could see how I have changed in the last three months. I went to see a friend of mine that I had not seen since I began to take your treatment. Doctor, I wish you could have been with me when she said: 'Why! How you have changed! Why! the last time I saw you you looked as if you would not live six months. And now I see you as well and fleshy as ever.' Doctor, would you believe it, I weigh 132 pounds now. Oh! Doctor, I cannot thank you enough for what you have done for me. I am only sixteen years old now, but I think I have suffered enough to satisfy anybody that wished me to suffer. I used to go to my room and cry every afternoon; but now I sew, or take a walk with my sister. Oh! I am so happy because I am well. Doctor, I have nothing to give you in return but my poor thanks, but such as they are, I hope you will take."

CASE 97,231.—*Retroversion of the Womb, much nervous disturbance, Dyspepsia, and Constipation.*

A lady writes from Hudson, Kan.: "I will now drop you a few lines to let you know that my health is almost as good as ever. I have a fine baby girl, four months old to-day, as fat and healthy as can be. I got along very good. Even when baby was born I suffered but very little pain, and I know it is all due to your medicine, for which I am very thankful to you. After all those years of pain and misery if I am in need of medical attention I will certainly turn to you again."

CASE 94,006.—*Uterine Prolapsus, Dyspepsia, and Piles.*

An elderly lady writes from Philadelphia, Pa.: "I must ask you to excuse me this time for not writing sooner, as it has been a busy time with housecleaning, but I am happy to say that I am well and went through with my work with little fatigue. The womb does not trouble me any more, and the piles are cured, for which I am grateful, as I suffered most from them, which made me feel very weak, and I do not feel the weakness or the palpitation of the heart. Last Thursday I walked about seven miles. I was tired, of course, more with the heat, but got home, had a bath, and laid down to rest, and felt bright afterwards; took a short walk again before bedtime. So I think I am pretty well. My medicines are about done, except those tablets. I will have some of those anti-bilious pills shortly. I think they are very good. If there is anything more that you require to know, I will gladly inform you."

CASE 103,049.—*Ovarian Disease, Uterine Weakness, and marked Nervous Irritability.*

A lady living in Catskill, N. Y., writes: "I am very much better in every way. After years of headache, have scarcely had one since I began the treatment. Also, no more backache, except when I am very tired. My abdomen was swollen hard and sore. That is much better, so much better that I can hardly express how differently I feel. The nervousness is much better too. Am still nervous, though not so distressingly so, and can control it more now. The trembling in my limbs was gone after the first month, and now I never feel it except when I work all day or when I have my sickness. As to my monthly sickness, instead of spending three days of agony in bed, I am able to be around a little the first two days. By keeping quiet and using the medicine, I get along wonderfully for me. Hardly know myself. My husband says I am a different person, that the medicine has done wonders. I am doing my own work and washing alone now after having help all summer, and I do so want to keep well."

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CASE 74,206.—*Prolapsus Uteri of several years' standing, and general health much impaired.*

Husband writes from Syracuse, N. Y.: "It is a late day to give in our final report of my case, 71,234, and my wife's case, 74,206. We delayed reporting to see if the marvellous cure so speedily effected, was permanent, and can say that we are both in perfect health, better than we ever enjoyed in our lives. It is now eight months since we discontinued your treatment. I have gained 28 pounds, and remain at a weight of 145 pounds. Your system of treatment certainly cannot fail to secure the highest endorsement."

In a second letter from the same patients recently received, the husband writes: "Your favor of the 6th inst. received, noting inquiry concerning my wife's health. Would say that while she was not feeling well (simply for a few weeks in August, 1893), she has never enjoyed better health than since your treatment and cure of 1888. The cure was perfect and lasting, and I can truly say that to-day there is not a woman who enjoys better health—never ailing—constantly well. In case anything would trouble, she would surely consult you; but the weakness, which you undoubtedly diagnosed correctly, has been entirely removed by your treatment. We have since four healthy young children, none of them ever sick, all playful and happy. Gratefully and respectfully," etc.

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CASE 81,020.—*Prolapsus Uteri, marked irritation, and depression of the nervous system, and obstinate constipation.*

A lady writes in 1899 from Washington, D. C.: "I am one of your old patients. Somewhere in the seventies—I forget the exact date—I consulted you at your office where you prescribed for me a six-months' course of your medicine which I paid for, and you expressed to me. I do not think I could have invested what I gave you for the medicine in anything else which would have given half the relief I obtained from it. I have been much stronger in every sense, and have told hundreds of people of the efficacy of your remedies. I think you understand there are so many worthless advertisements afloat, purporting to cure all the ills of flesh, but which are worthless when tried, that many think there is no cure. Again, there are so many in the working-classes who take no time to investigate the glaring pamphlets thrown into the front door. These have become a matter of course; so they think all a hoax. There are so many who know nothing of your medicines, yet need them so much. Every day and hour I see and know of suffering for lack of such common sense medicines."



## EVIDENCES OF CURABILITY OF CHRONIC DISEASE. 775

### CASES OF BARRENNESS.

**CASE 83,176.**—*Barrenness from Prolapsus and Congestion; Dyspepsia and Neuralgia.*

A lady writes from Greenpoint, N. Y.: "Your inquiry received this A. M., and am happy to say that I had a fine, perfect, ten-pound boy born on February 11th. I had a very hard time, but I feel all right now, and the baby is doing well. *I can say with pleasure and thanks to your treatment that I am a happy mother.* I send you a photograph of my baby boy taken when he was two months old, for publication in *THE HEALTH MONTHLY*. I was married nine years ago, dating from May 5, 1895, and the baby was born on February 11, 1895. I would like very much to have a *MONTHLY* sent to me wherein you publish the picture."

(A photograph of this infant is given on page 578.)

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**CASE 87,077.**—*Barrenness and Dysmenorrhœa, Dyspepsia and Catarrh. No children, though married six years.*

A lady writes from Illinois: "I received a letter from you some time ago. I was not at home at the time as I had left for Buffalo where I visited five weeks with my parents. I intended writing you, but since we have had baby I don't get much time to do anything outside of my general work. Baby was born March 15th. I was sick five days before baby was born. She was very weak and weighed but three pounds. She is a lovely baby now and we are very proud of her; also of you, Doctor, for we would not have our darling had it not been for you. We are indeed very grateful to you. Baby being a girl robbed her of your name; we named her Vivian. I had baby's picture taken when six months old and we will send you one so you can see for yourself how rapidly she has improved. She weighed twenty-three pounds when six months old. I am quite well, although I don't feel quite as strong since baby was born; probably I will be stronger after I stop nursing her. I have been talking to my friends of you, two of which called at your office to see you. They told me your office was full of patients and they hadn't the time to wait as they had to catch their train as they stopped over while going through New York. I hope you will let me hear from you what you think of our darling baby if your valuable time will permit."

(The picture above spoken of is produced on page 580.)

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### BORN BY THE BOOK.

A lady writes from Massachusetts: "Concerning the health of my husband, I will say that he is much better. Immediately after the first week he slept better, appetite came back, and now he pursues the exact mode of living as you directed. He does not eat much meat, and avoids everything that could molest his stomach. He does not drink any beer either. We give you our sincerest thanks for your valuable treatment.

"I shall have to thank you once more for your great book 'Plain Home Talk.' When we arrived in this country seven years ago I became the mother of a little girl who was our great delight, as she was the first girl of six children that we have had. She seemed to be healthy and happy when in the course of two days she died from summer complaint. I was struck down by this great blow, and I was at the point of really losing my mind, I did not sleep for nights and lost all joy in living. The only desire I had was to meet my child. I could sit for hours thinking of her. Considering that *I was about forty* I had very little hopes of becoming a mother again, when through an advertisement in some paper my attention was called to your book which I procured at once, and which gave such clear

and succinct directions about sexual matters. I read it very carefully and after two months I became pregnant. I herewith give you once more my best thanks for your clever work. I lived during my pregnancy according to your advice, and I became the mother once more of a little girl. I cannot refrain from sending you her picture, and repeating that through you joy and happiness have once more made their abode in our home. I have no objection to your using this letter."

(This child's picture is exhibited on page 614.)

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CASE 96,074.—*Barrenness of a woman who miscarried repeatedly.*

A woman of low vitality, who miscarried every time she became pregnant, writes from Hoboken, N. J.: "Words cannot express my thankfulness to you for your treatment. I feel better than I ever did, and a little girl was born to us the 21st of August. She is a lovely child, full of life. She has not been sick a day since she was born, and I hope she will keep well. I am sure if I had not taken treatment from you I would have lost her like the others. Thanking you again for your kindness, I remain, yours," etc.

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CASE 61,010.—*Barrenness in a scrofulous woman reduced in health, and suffering from Prolapsus, Piles, and Fistula.*

She writes from Bunker Hill, W. Va.: "It is a long time since I wrote, and a great many things have happened since then. The best thing is, I have a fine, big boy, nearly four months old. He was born on the 14th of August, and weighed twelve pounds at birth, and twenty pounds at three months old. I do not know how much he weighs now, and he is increasing all the time. He is the premium baby of this county. Every one knows about him, and so many come to see him. It is such a wonder because I always was so delicate. I used the foods you recommended during pregnancy, and had a good time. He never has been sick, and is the picture of health. I never saw as strong a child as he is. Every one remarks it. He could hold up his head as soon as he was born, and in three or four days could turn over. I guess you would think you had done wonders with me if you could see this baby. The physician who attended me is a new one here, and a good one too. I told him how I had been and how I was under your treatment, and he said that was just the kind of treatment I needed. He thinks there never was such a baby as this. Says he never saw such a one in his life. I am getting along very well now. I am getting strong again. I am taking very good care of myself, and I think if nothing happens, I will be stronger than ever I was. Dear Doctor, I thank you so much for what you have done for me. Every time I look at my baby, I shall think of you, for if it had not been for your treatment I never should have had him, and I am the happiest woman in the world."

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CASE 84,239.—*Barrenness, due to Anteversion and Leucorrhœa in an anemic woman with scrofulous inheritance.*

She writes from Cape Lookout, N. C.: "I have been thinking of writing you for a long time to let you know how I am getting along, but have neglected to do so. I am more than thankful to you for the treatment and advice. I have been gaining in health ever since I commenced to take your treatment, and can truthfully say that I am in the best health I have been for twelve years, and weigh twenty-five or thirty pounds more than I ever did. I have a fine baby boy a little over five months old, and the picture of health. I had no difficulty in carrying it, or at his birth. You cannot tell how I appreciate my improved health."

# EVIDENCES OF CURABILITY OF CHRONIC DISEASE. 777

## MISCELLANEOUS DISEASES.

CASE 66,341.—*Rheumatism, affecting pretty much all the joints, following a prostrating attack of Malaria.*

A gentleman writes from Savannah, Ga.: "Your favor at hand. I feel very much ashamed of not having written you long ago, and beg your pardon for neglect. You ask me how I feel. Now, Doctor, if there is anything the matter with me, I don't know what it is. I never felt better in my life, and am working like a Turk from six in the morning until eight or nine at night, seven days in the week; eat regularly, and sleep the moment I strike the bed until I get out in the morning. I am now 28 pounds heavier in weight than when you took hold of me. I don't use tobacco in any form. Now, Doctor, if there is anything within my power I can do for you, just mention it, and you will always find me at your service, for to you I consider I owe my life and happiness to-day."

CASE 80,010.—*Sciatica of nine years' standing.*

A gentleman writes from Fort Lemhi, Idaho: "Your letter and medicine received. Very many thanks. I am gaining on the sleep trouble. I received a letter a few days ago from a brother who lives in Minnesota, and he has about the same opinion of you that I have, and if you succeed in curing him, I shall regard it as a much more wonderful cure than mine. He lives in Morristown, Rice Co.; do not know his case number. He says he knows that he is on the road to recovery and that he believes Dr. Foote is the smartest doctor on the face of the earth, and he is not a man given to use extravagant expressions. I think I can understand how he feels. Doctor, there is not an hour while I am awake, that does not find me comparing my present condition with that of last year, and then there comes the thought that I owe you such a debt of gratitude as I shall never be able to repay."

(This correspondent had what the surgeons supposed to be a tumor in the hip-joint, and amputation of the leg was seriously advised. I diagnosed the trouble as sciatica, and made an entire cure of it by medical treatment.)

CASE 97,341.—*White swelling of the knee-joint in a lady with a scrofulous condition of blood.*

She writes from Janesville, Wis.: "I am feeling very much better. Have not had a pain in my side for the last two weeks. My knee also is very much better. It is still swollen on the left side, which at times is worse, and then again hardly to be seen. I am now quite satisfied with the good your medicines have done for me. I was very impatient at first, but now that I see a great change and feel so much better I am well pleased."

CASE 67,219.—*Syphilis (secondary) with marked constitutional disturbance.*

A gentleman writes after seven months' treatment from Brooklyn, N. Y.: "From the day I commenced your treatment I saw no traces of my disease. I have increased since then from 138 to 198 pounds, and to-day am as big and strong as an ox. My brother whom you treated has died, but I think had he stayed with you that he would have been all right."

Ten years later the above correspondent writes again as follows: "All of my other troubles have disappeared, except that perhaps my throat sometimes bothers me in the morning. This I have to clear out before I can speak clearly. The wash you gave me for my throat I did not use but a little while. I did not bring it with me, but I will send home for it. The pains about my chest that I had when I

commenced treatment, left before I had used the medicine three weeks. In fact, I never felt better in my life than I do now. If I have any more trouble with the disease (syphilis) I will take another course of treatment."

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**CASE 104,015.—*Syphilis, Rheumatism, and Neurasthenia.***

A young man of Jamaica, British West Indies, writes, *after only one month's treatment*: "Herein I beg to acknowledge the receipt of your remedies which came safely as per invoice. I certainly paid regular attention in taking the medicine, and to say that they did me good, would be but a slight way of expressing it. I feel vigorous, more so than I have felt for many a day, and both my condition and complications improved. The pains in my left chest and knee are nothing near what they were. The ringworms on my thighs, and pimples on hands are about the greatest trouble. Still, they show signs of a change. My appetite has fairly improved, and I digest food with less difficulty. The only trouble I experience now is frequent belching, say about two hours after each meal. The constipation is not so troublesome. I have sent you a full report regarding my symptoms so far as my ability permits, and am making preparations to send you a big order by next mail."

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**CASE 103,009.—*Diabetes five years ago, followed by threat of Bright's disease and general prostration.***

A lady of Quebec, Can., after taking three months' treatment, writes: "Your treatment has been very helpful to me. I am enjoying better health than I have had for years. You may be sure, Dr. Foote, that I shall place myself under your treatment whenever I need it. I have not lost an opportunity of praising and recommending you to my friends."

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**CASE 103,036.—*Bad blood condition, Constipation, Piles, and Catarrh.***

A middle-aged man writes from Elizabethtown, New Mexico: "Having received your letter inquiring how the course of treatment has benefited me, I will say that I feel better in every way than for five years, and I can do more work without feeling over-fatigued than before. I have not used quite all the medicine, as there have been several times that I was away and could not carry the medicine with me, but when possible, I have taken the medicine according to directions. I shall advise others to give you a trial, as I am satisfied your medicines will do all you claim for them. Very gratefully yours," etc.

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**CASE 72,222.—*Glandular Congestion accompanied with severe pains and much physical weakness.***

A middle-aged lady writes from Easton, Md.: "I must thank you again for my better feelings, which extend to a healthful state of mind, as well as marked physical improvement. The glands are in a natural condition again, and if I could only realize the necessity every hour of not overtaxing the powers of endurance, I might be better than I am, but when I remember where I was last year, and my condition then, I am overwhelmed with gratitude both to you and the common-sense system you represent—bound as it is by no limitations as to school or prejudice—but open to the advance of truth and science from every direction. You may be sure that your praises will be sung by me for the good of mankind."

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**CASE 85,110.**—*Bedridden, with Nervous Prostration, Uterine Weakness, Dyspepsia, Constipation, and Neuralgia.*

A lady writes from Ellis, Iowa: "I am growing stronger every day. The old disease does not return, and I now do lots of work, while I was bed-ridden when I came to you, for all of which I am exceedingly grateful."

**CASE 101,145.**—*General Debility, resulting from overwork, and sedentary habits.*

A young dressmaker of Ida Co., Iowa, writes: "Your remedies have done wonderful work for me. I have now finished my six months' treatment, and feel now that I could do without medicine. I feel altogether like a new person, and I feel very grateful to you that you have taken so much interest in me and cured me. I will write here and tell you about my symptoms: My bowels move regularly. I have not taken anything to move them for over a whole month. My tongue does not coat any more. I have a good appetite. I have gained six pounds this last two months. I come around regularly every month. I don't have any pains of any kind. I don't have any pain in my side any more."

### EARLIER TRIUMPHS.

Thus the quotations of letters from grateful patients might go on until we reached the last cover of the book, and even then it would require a larger volume than this to publish them. To show, however, the superiority of botanical remedies over the drugs usually employed, I shall ask the indulgence of the reader while I present one—just one—of many testimonials that might be given from those received in the earlier years of my practice, when such results must be more attributable to the character of the medicines employed, than to experience or acquired skill in the practice of my profession. I look back with pride and great satisfaction to many apparently hopeless cases which were completely restored through the evident reliability of my vegetable medicines. That is to say, they signally effected in each one just what I was seeking to accomplish. This could not have been the result if from any cause they were inert or otherwise deficient in quality. If the reader has not read what is said of such therapeutic agencies in former pages of this work, let me ask him to turn to Chapter IV. of Part I. But to the testimony in point:

#### A BEDRIDDEN CASE.

Note: If any person of inquiring mind would ask what caused the patient to be bedridden, I will answer at the outset that there was not a sound organ in her body, nor was any natural function normally performed. There was hardly room on one entire page of my register to admit the description of the pains, aches, and uncomfortable symptoms under which she suffered. It was one of the blackest looking pages in the case-book.

On the 26th of January, 1868, at the conclusion of her treatment, I received a letter from this patient, from which I will make the following quotation:

"I regret to terminate so pleasant a correspondence, and shall take pleasure in calling upon you when we visit New York. Before taking leave I wish to say that if extracts from my former letters or this can be of any service to you, you are welcome to use them in any way you like. And if you desire it, we will send you an affidavit testifying to your success, for I not only consider myself a wonder, but far and wide has been known and discussed the remarkable sufferings and recovery of H. W. Satterly, daughter of Wm. R. Satterly of this place, and now your sincere friend, Mrs. S. F. Smith, East Setauket, L. I."

It was in compliance with my acceptance of her grateful proposition that the following affidavit was subsequently made and forwarded to me by mail:

"EAST SETAUKET, L. I., N. Y., May 4, 1868.

"DR. E. B. FOOTE—

DEAR SIR: Although you are fully aware of the wonderful success of your efforts in my behalf; and although the voice of *one* will scarcely be heard among the many who are daily proclaiming their gratitude to you, I feel it a duty to send you the following testimonial, in order that others may read, believe, and hope. For my case was certainly an unusual one, and almost unparalleled.

"When I was but three months old, symptoms of erysipelas were first noticed, and I was never afterwards a healthy child, but was always feeble and never able to endure fatigue.

"At times I suffered much from erysipelas in the eyes and head, and various parts of the body. At fourteen years of age, my health became very poor, and for more than two years I was miserable indeed—often confined to the bed for weeks together. At the end of that time I was entirely prostrated. Then what a sufferer I became! I was tortured with the most exquisite pain, lost all appetite, was reduced to a mere skeleton, and was soon so feeble that I could not raise my head from the pillow.

"After a few months I rallied slightly. But the sufferings were only somewhat *alleviated* by opiates, which I took in various forms and in incredible quantities. All efforts to remove the *causes* were vain—all the remedies tried seemed to be of no benefit. Thus I lay for more than four years, helpless and despairing. Then we heard of and applied to you. But I had no hope, no faith in any medicine. For my system seemed to be wholly under the power of disease; the lungs, liver, etc., in a very bad condition, the nervous system completely shattered. For three years the bowels had *never* moved without artificial means. Your reply to our letter of consultation was so gratifying that we determined that I should be placed under your care. For you guaranteed nothing—did not promise to give me health in a week or a month, but said that you 'should expect that I would shortly begin to improve, and by perseverance, be ultimately cured;' and that 'my recovery, in order to be real, must be gradual.' I commenced using your remedies, and *in two weeks there was a slight, though marked improvement*. Then I began to hope! I continued under your treatment, and we endeavored to second your efforts, and follow your directions in every particular. Gradually the Tyrant Disease was vanquished. The cough and expectoration became better; the pain in the head was lessened; the cramp in the stomach and dyspepsia were relieved; the bowels became active and regular, and, in short, the whole system was invigorated, renewed. In about six months I began to stand alone and gradually my strength increased so that I could walk about my room; and finally—in little less than a year after commencing the use of your remedies—oh, joy of joys! I was able to ride out! *Just five years and four months had passed since I had breathed the fresh air under the open heavens*. About this time I wrote as follows:

"When we look back, and think of the state of my health when I commenced using your remedies, only about a year ago, of my sufferings, feebleness, nervousness, at that time; and when we remember the four previous years of misery, in which countless doses were swallowed, with very doubtful results, and sufferings that were only relieved by morphia; when we think of all this and more—more than I can tell, and then reflect upon the present condition, we cannot indeed but feel very grateful and hopeful, and regret so much that we could not have known of you five, yes, seven years ago. We have no doubt but that, could I have been treated by you then, I should never have become so feeble and thoroughly diseased.



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To-day, as I write, I can, when weary, lay down my pen, walk about my room, go to the window and look out, breathe the fresh air, and return to my writing refreshed. *A year ago, to-day, I could not; no, not if by doing so I could have gained health itself. I could not have stood alone one second.*

"And now I can say that I am stronger, and am rejoicing in better health than I have known for more than nine years. I have entirely relinquished the use of morphia, and though not constitutionally strong and robust, feel that the health I now enjoy is good compared to the ill-health that I formerly endured.

"I care not what skeptics may say, I know that your remedies have helped me. And furthermore, I wish to say that I send this testimonial and affidavit entirely unsolicited.  
MRS. S. F. SMITH."

Sworn to before me this

4th day of May, 1898.

ORAN W. ROGERS,  
*Justice of the Peace.*

[Copy.]

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### CONCLUDING REMARKS.

In a large 80-page pamphlet entitled "Evidences of Dr. Foote's Success" (sent free to all applicants), many equally remarkable cures are given in letters from patients treated in the decade ending with the year 1900. Just such so-called "miracles" were performed in nearly every State and Territory in this great Republic, and the extended knowledge of them is what has made the name of Dr. Foote an attractive bait for the professional hooks of charlatans in various States in this country, which I have exposed, notably in Illinois, Utah, Montana, and North Dakota, and from which States I have caused to be driven out mountebanks who either assumed my name or pretended to be connected with me, as related in the closing pages of Chapter V., Part I. It will be well for the invalid reader to refer to this chapter on Doctors, and avoid being taken in by any such impostors. All of the foregoing extracts, except the last, are from comparatively recent letters. Once in about three months we must consign to the flames most of our correspondence and memoranda, or we should have to maintain an immense store-house for the archives that would otherwise accumulate. Furthermore, it would require much valuable time to select the best that might be given. But taking them pretty much as they come, they give a better idea of how patients report at different stages of treatment, and they are perhaps more interesting than they would be if they were all final letters after a cure had been effected. In giving a limited number, all kinds of diseases cannot be represented. To attempt to do this would make a huge volume. The pamphlet alluded to contains a greater variety, and it is pretty much given up to such testimonials, and all can receive a copy gratis who are interested in them. Those desiring to consult the author can call at his office or answer the questions on page 761. Consultations are always free.

## CHAPTER XIII.

### **PRESCRIPTIONS FOR COMMON AILMENTS AND SUGGESTIONS FOR EMERGENCIES.**

#### **Preliminary Remarks.**



THIS part of "Plain Home Talk" appeared in some former editions as an Appendix. Before it appeared not a business day came without the receipt by author and publishers of letters expressing the highest gratification with the work, or containing thanks for some special bit of advice or information which a reader had found very useful and appropriate to his needs; but now and then was heard a complaint that the book was not as other popular medical works in the one matter, that it lacked special instructions for the management of all diseases, and prescriptions for medicinal treatment of them. To the careful reader of the book it has doubtless been made evident that the author never intended to include in this work the broad domain of medical practice, which would require, at least, another volume of a thousand pages. There are already several carefully prepared, but necessarily large and expensive, works covering this field, while this volume embraces many very important subjects which these family practice books do not touch upon. A knowledge of the causes and means of avoiding disease is not only more important, but more easy to make plain to the general reader, and the author still holds firmly the opinion that, in selecting subjects for the preceding chapters, he has chosen well for the greatest good of the greater number of his readers. To acquire even a moderate understanding of the other domain—the diagnosis and treatment of disease—

really necessitates much study, wide reading, special aptitude, and opportunity for varied experience; but there is no need of repeating here the line of argument presented in a chapter under the heading "Everybody His Own Doctor."

An old recipe for cooking a hare, begins, "first, catch the hare," and so, to use wisely a prescription suggested for a *disease*, presupposes that the *disease* has been correctly recognized. For neither acute nor chronic diseases is it possible to name universal specifics that are applicable in all cases; and many of the familiar names of disordered states of the body are, in fact, merely names of signs or symptoms, and not of primary diseases. So it becomes easier to suggest remedies or recipes for relief of ordinary symptoms of consumption (of which *disease* there are many varieties) than to write down dogmatically prescriptions for the disease itself, or the remedies for removing its causes. As to acute diseases, even when correctly recognized, the curative medicine for one person might be the worst possible for another, as in pneumonia; and all physicians agree that, however important be the recognition of the disease, the treatment is after all determined by the symptoms.

Even for well-known symptoms it is not always easy to point out how to select the best remedy. Take headache, for instance, it may be due to brain exhaustion, to stomach disorders, to liver or kidney incompetency, to sluggish bowels, or womb congestion; and the best mode of relief for any case is that which will in the best and quickest way remove the cause.

It is, therefore, easy to see that a prescription may frequently do wonders or do nothing, according as it is or is not appropriately selected and employed. No physician can, then, be judged by his prescriptions, except when they are used by his direction and selection in cases under his care. Furthermore, in fairness both to myself and to my readers, I must say that I have not thought best to present always my "first preferred" formulæ in the following pages, because many of them could not be promptly and properly prepared, except in my own laboratory or in some other one where all the resources of "eclectic specifics" are available. To make recipes of use anywhere "round the world," they must be such as can be "filled" or made up at the average pharmacy, and not call for specialties that are carried in stock by only a comparatively few druggists. I have had occasional letters from readers who have not been able to get some of the simple articles named in the following recipes, but it is not my intention to make it necessary to send to me for the materials or compounds proposed. On the contrary, the intent is, so far as possible, to name only such as can be obtained in almost any place where a drug-store is to be found, and this necessitates for me some compromise of princ-

ple as well as preference. Many a "common stock" article, if available just when needed, may be far more useful than the preferred thing that can only be had several days or weeks later. Some emergencies can only be well met by having handy in the house a few standard things likely to be needed any day. My Sanitary Bureau specialties are handy, ready-made stock covering a large range of utilities. If I were to offer their formulæ here all could not be *promptly obtained* of every druggist, and when they could be got, the price would, for a small lot, generally exceed mine.

A few years ago a collection of useful notes and articles was made, from previous volumes of Dr. Foote's *Health Monthly*, to make a pamphlet of one hundred and twenty-eight pages, published under the title of "Dr. Foote's Handbook of Health Hints and Ready Recipes." It served so useful a purpose, and helped so often to alleviate the common ailments of many a family (judging by the favorable reports of it), that we were encouraged to think that the utility of "Plain Home Talk" could be increased by adding this chapter of selected prescriptions. Many have been chosen because they are in the best sense "homely" and handy, and care has been exercised in the selection to avoid such drugs or combinations as might not be safe in inexperienced hands. Yet even the dullest tools may hurt clumsy hands, and those who make use of any of the following formulæ are urged to exercise care to avoid mistakes in copying or compounding, and to make themselves familiar with measures and doses. Both solids and fluids are prescribed in drachms and ounces, but there are two parallel tables of weight and measure, thus :

60 grains — 1 drachm.  
8 drachms — 1 ounce.

60 drops — 1 fluid drachm.  
8 fluid drachms — 1 ounce.  
16 ounces — 1 pint.

An ordinary teaspoon once measured approximately one fluid drachm, but now teaspoons are made larger than formerly, so that one teaspoonful may measure two drachms. A tablespoonful equals about four drachms, or half an ounce, while a teacup holds about four (fluid) ounces, or one gill.

1. Abortion, when threatened, may be warded off by entire rest in bed, and the administration of one to five drops of the fluid extract of conium, once in two hours; or fluid extract of viburnum prunifolium in doses of one drachm once in two hours.

#### ACNE: FACE PIMPLES.

2. *R.* Tinc. green soap.... 3 ounces.  
Carbolic acid.....  $\frac{1}{4}$  drachm.  
Alcohol..... to make 4 ounces.

Apply at night and wash off next morning with hot water.

Or,

3. *R.* Camphor..... 10 grains.  
Simple sulphur ointment..... 1 ounce.

Apply at night and wash off next morning with hot water.

Or,

4. *R.* Ammonium carbonate..... 8 drachms  
Boric acid..... 1 drachm.  
Ether..... 8 ounces.  
Alcohol..... 8 "

Used as a lotion twice daily.

ANAL CHAFING AND SORENESS.

5. *R.* Tannin..... 2 drachms.  
Lard..... 1 ounce.  
Makes an ointment for local use.

ANGINA PECTORIS: PAINFUL  
CRAMPS IN THE CHEST. ALSO  
FOR FACIAL NEURALGIA.

6. *R.* Ammonium valerian-  
ate..... 5 grains.  
Ammonium chloride. 30 "  
Take in one dose, in water, and again  
in an hour, if required.

APHTHÆ, OR APHTHOUS SORE  
MOUTH, COMMON IN PHTHISIS.

7. *R.* Sulphate quinine..... 1 grain.  
Oil of black pepper.... 1 drop.  
Water..... 1 ounce.  
Use to rinse the mouth,

ASTHMA: FOR RELIEF OF  
PAROXYSMS.

(Apply freely Dr. Foote's Magnetic  
Ointment to the chest.)

8. *R.* Tinc. lobelia..... 1 ounce.  
Ammonium iodide... 2 drachms.  
Ammonium bromide 3 "  
Syrup tolu..... 3 ounces.

*Dose.*—One teaspoonful every one or  
two hours.

Or,

9. *R.* Powdered lobelia..... 2 ounces.  
Powdered stramonium 2 "  
Powdered nitre..... 2 "  
Powdered black tea... 2 "

Mix thoroughly, place a teaspoonful  
on a saucer, ignite it with the flame of an  
alcohol lamp, and breathe the fumes,  
holding head well over the saucer.

BABY FOODS.

10. Add a pint of hot water to an  
ounce of *pearl barley*; cool and strain;  
mix one-third of a pint of this barley-  
water with two-thirds of a pint of fresh  
cow's milk, and add a teaspoonful of  
milk sugar.—Dr. S. B. SHERMAN.

11. *R.* Cow's milk..... 1 ounce.  
Lime-water..... 2 ounces.  
Cream..... 2 "  
Sugar-water..... 3 "

The sugar-water consists of 18  
drachms of milk-sugar in a pint of  
water.

BAKING POWDERS.

12. *R.* Tartaric acid..... 6 ounces.  
Bicarbonate sodium 8 "  
Flour..... 32 "

Mixed.

Or,

13. *R.* Pure cream of  
tartar.....  $\frac{3}{4}$  drachms.  
Baking soda..... 1 drachm.  
Corn-starch..... 1 "

To make this excellent powder easily  
use one teaspoonful of each article as a  
drachm. Sift together and keep dry.

BALDNESS IN SPOTS.

Use with care a stimulating salve of

14. *R.* Veratrina..... 5 to 10 grains.  
Lard..... 1 ounce.

BED SORES.

15. *R.* Alum..... 1 ounce.  
Tinc. camphor..... 4 ounces.

Mix thoroughly with the whites of  
four eggs, and apply to the sores.

Before bedsores Dr. Rosenbach re-  
commends that lanolin be rubbed into a  
red spot denoting an impending bed-  
sore. He has had unvarying success  
with it.

BITTERS.

16. *R.* Bruised cinchona  
bark.....  $\frac{1}{2}$  ounce.  
Bruised bitter or-  
ange peel..... 1 drachm.  
Bruised calumba  
root..... 1 "  
Bruised gentian  
root..... 1 "  
Bruised rhubarb  
root..... 1 "  
Chamomile flowers 1 "

Mix and dampen the above and then  
percolate through a tin funnel,  
slowly, with brandy, six ounces, and  
then with water, one pint.

*Dose.*—One tablespoonful before each  
meal.

BLEEDING FROM THE STOMACH.

17. The safest and most pleasant  
remedy for hematemesis is said to be  
water, drank as hot as can be borne, in  
quantities of a half-tumblerful to a  
tumblerful. No further hemorrhage  
occurs, and fragments of clots are vom-  
ited.

BLUES, MELANCHOLY.

18. Dryden says: "The yellow gall  
that in your bosom floats, engenders  
all these melancholy thoughts." The  
late Rev. Dr. Deems hence prescribed  
anti-bilious pills for members of his  
flock in the mire of despondency, and  
reported good results. Of all anti-bilious  
pills, Dr. Foote's Magnetic Vegetable  
Anti-bilious Pills are the best.

## BRONCHITIS, IN INFANTS.

19. **R.** Syrup of senega... 1 drachm.  
Syrup of tolu..... 2 ounces.  
Ammonium chlor-  
ide..... 10 grains.

One *small* teaspoonful every three hours.

## BRUISES.

20. To prevent black and blue spots, try starch powder or arrowroot moistened with water to a paste.

## BITES OR STINGS OF INSECTS, BUGS, FLEAS, MOSQUITOES, ETC.

21. **R.** Sodium sulpho-car-  
bolate..... 1 drachm.  
Water..... 4 ounces.

A tablespoonful by the mouth, four times daily, and apply externally to the stung part.

22. Locally, apply castor-oil: it is generally handy, and always soothing.

23. For bee-sting, apply a wee drop of oil of cinnamon with a splinter of wood.

## BOILS, ABSCESSSES, CARBUNCLES.

24. Apply with a camel's-hair pencil one part of carbolic acid in ten parts of glycerine.

Or,

25. Hot fomentations of poppy-heads, and poultice.

Or, an ointment of

26. **R.** Powdered borax... 1 drachm.  
Benzolic acid.....  $\frac{1}{2}$  "  
Petrolatum..... 2 ounces.

and take internally the following:

27. 1-10th-grain tablet of calcium sulphide three times daily.

The homeopaths prescribe:

28. Tincture of arnica, one drop once in three hours for use internally. Two drachms of extract of fresh arnica flowers in four drachms of honey, make a good local application beneath a poultice.

## BURNS.

(Dr. Foote's Magnetic Ointment on linen.)

29. Carron oil, an old standard remedy, is made of equal parts of linseed-oil and lime-water.

30. Dip pieces of blotting-paper in molasses and apply them to the burns; especially handy and safe in burns about the face.

31. **R.** Boracic acid..... 15 grains.  
Glycerine..... 1 drachm.  
Olive-oil..... 1 ounce.

As a local application.

32. Paint the burned part with extract *pinus canadensis*.

Baking soda applied dry, with bandage wet with water, is very soothing.

## CANCER.

Locally, to relieve pain, apply lint soaked in a solution of

33. **R.** Citric acid.....  $\frac{1}{4}$  drachm.  
Water..... 4 ounces.

## CATARRH OF THE HEAD.

34. Use Magnetic Catarrh Balm at night, and a cleansing, disinfectant wash for use as a nasal douche, morning; also one of the following recipes:

35. **R.** Carbolic acid..... 5 grains.  
Camphor..... 5 "  
Common salt..... 2 drachms.  
Water..... 1 pint.

Or,

36. **R.** Permanganate of potas-  
sium..... 4 grains.  
Water..... 4 ounces.

Snuff this solution up the nostrils.

37. A pinch of salt in warm water makes a good nasal wash.

38. **R.** Baking soda..... 3 grains.  
Borax..... 3 "  
Water..... 1 ounce.

As a nasal wash.

For a catarrh of the stomach, or mucous membrane generally.

39. **R.** Potassium bichro-  
mate..... 10 grains.  
Water.....  $\frac{1}{2}$  pint.

*Dose.*—One teaspoonful three times a day.

Or,

40. Tinc. nux vomica, two or three drops in water every three hours.

## CHILBLAINS.

41. **R.** Carbolic acid..... 1 drachm.  
Tinc. iodine..... 2 drachms.  
Tannic acid..... 2 "  
Simple cerate..... 4 ounces.

Use as a salve.

42. **R.** Ammonium chlor-  
ide.....  $\frac{1}{4}$  ounce.  
Vinegar..... 2 ounces.  
Water..... 6 "

Apply as a lotion.

43. Oil of peppermint, applied with soft cloth or camel's-hair brush.



44. CINDER IN THE EYE.—Try rubbing *the other eye*, which causes flow of tears in both and washes out the foreign body.

45. Get a friend (who knows how) to roll the upper eyelid over a pencil to expose its under surface, when any foreign body imbedded in the membrane can be wiped off with soft tip of a finger. In doing this the subject looks downward, while the operator takes the eyelashes of upper lid between thumb and finger, and raises them up while, with the other hand, using a pencil or pen-holder to press the body of the lid down, thus turning it wrong side out.

### COSMETICS.

46. For removal of comedones ("black heads" or "flesh worms") from the face, try washing with water containing diluted water of ammonia, one teaspoonful of the latter in a wine-glass of water, and rub briskly dry with a rough towel. Comedones can be pressed out with a watch-key, placing the winding end over the black spot and pressing down firmly.

COMEDONE LOTION, for faces marred with "black heads" or "worms."

47.  $\mathcal{R}$ . Sulphuric ether.... 1 ounce.  
Ammonium carbonate..... 1 drachm.  
Boric acid..... 20 grains.  
Water to make.... 2 ounces.

Mix and apply twice a day.

For acne or pimples, a good lotion is as follows:

48.  $\mathcal{R}$ . Sulphur..... 3 drachms.  
Spirits of camphor 1 drachm.  
Lime-water..... 3 ounces.

EMOLLIENT GLYCERINE LOTION, for softening chapped skin.

49.  $\mathcal{R}$ . Mucilage of quince seeds..... 1 ounce.  
Glycerine..... 1 "  
Orange flower-water 4 ounces.

50. For CHAPPING, try finely powdered common starch.

To a basin of water add a teaspoonful of

51.  $\mathcal{R}$ . Tinc. benzoin..... 1 drachm.  
Rose-water..... 2 ounces.

Many proprietary cosmetics contain lead, zinc, or mercury. In some form, as their basis, and such are poisonous.

For COLD IN THE HEAD, with "dry vapor" inhalant, like *Cutter's*:

52.  $\mathcal{R}$ . Comp. tinc. iodine 3 drachms.  
Carbolic acid..... 48 drops.  
Glycerine..... 1 drachm.  
Water..... 5 drachms.

Can be smelled from a bottle, or through a tube or inhaler.

For cold in the head—a snuff of

53.  $\mathcal{R}$ . Quinine sulphate. 1 drachm.  
Camphor..... 4 drachms.  
Powdered sugar.. 10 "

Many a "cold" is evidence of over-acid state and is relieved by

54. Sodium carbonate..... 10 grains  
taken in full glass of water three times a day—half way between meals, and at bed-time. Hot whiskey or lemonade is often bad treatment.

### COLIC.

55.  $\mathcal{R}$ . Magnesium carbonate..... 1½ drachm.  
Ammonium carbonate..... ¼ "  
Comp. tinc. lavender..... 2 drachms.  
Peppermint-water..... 6 ounces.

Dose.—A tablespoonful every two hours till relieved.

56. For baby's colic there is no safer treatment, and often nothing more required than gently rubbing of bowels with Dr. Foote's Magnetic Ointment. It is useful either in cases of diarrhoea or constipation, and favors normal action.

COLIC, COLDS, COUGHS, FEVERS—instead of paregoric:

57.  $\mathcal{R}$ . Pulv. lobellæ..... 2 ounces.  
Pulv. cypripedium.. 1 ounce.  
Pulv. ictodes..... 1 "  
Pulv. menth. ptp. ... ¼ "  
Pulv. anisi sem..... ¼ "  
Vin. xericum..... 2 pints.

M. Agitate daily for two weeks and filter.

For adults a tablespoonful in hot, sweetened water, every hour till sweating.

For children, a spoonful, and for infants 30 drops or less.—T. S. PRETTYMAN, M.D.

CHOLERA MIXTURES; FOR COLIC, CRAMPS, DIARRHŒA.

58.  $\mathcal{R}$ . Try first Hayden's Viburnum Compound, one spoonful in hot water every two hours.

59.  $\mathcal{R}$ . Tinc. capsicum.... 2½ ounces.  
Spts. camphor..... 2 "  
Tinc. gualacum.... 1½ ounces.

Dose.—One small spoonful in hot water every two or three hours.

(The New York *Sun* mixture.)

60. *R.* Tinc. capsicum..... 1 ounce.  
           Tinc. opium..... 1 "  
           Tinc. rhubarb..... 1 "  
           Essence peppermint. 1 "  
           Spirits camphor..... 1 "

*Dose.*—Fifteen to thirty drops, hourly.

(Squibb's diarrhoea mixture.)

61. *R.* Spirits camphor.... 1 ounce.  
           Tinc. opium..... 1 "  
           Tinc. capsicum.... 1 "  
           Chloroform..... 3 drachms.  
           Alcohol to make... 5 ounces.

*Dose.*—For adult, one drachm.

### CHOLERA INFANTUM, INFANT'S SUMMER DIARRHŒA.

62. *R.* Fluid ext. lycopos  
           virginicus (bugle  
           weed)..... 4 drachms.  
           Sweet milk..... 8 ounces.

Boil together one minute; cool it and keep cool, and give teaspoonful doses from fifteen minutes to two hours apart.

63. *R.* Sodium bicarbonate 4 grains.  
           Spts. of chloroform. 40 drops.  
           Glycerine..... 80 "  
           Water..... 1 ounce.

*Dose.*—One teaspoonful in two teaspoonfuls of hot water, and repeat in half an hour, if necessary.

### CORNS.

64. Apply glacial acetic acid with care to avoid touching adjacent parts.

Or,

65. Tincture of iodine.

Or,

66. Salicylic acid..... 1 drachm.  
       Simple cerate..... 1 ounce.

Or,

67. Ext. cannabis indica..... 5 grains.  
       Salicylic acid..... 30 "  
       Collodion..... ¼ ounce.

Apply with camel's-hair pencil night and morning for several days, till a protective coating is formed.

68. Dr. Foote's Magnetic Ointment is not caustic or irritant enough to dissolve corns, but is of great service in softening them, and to relieve heat, soreness, and inflammation when bound on with a soft cloth during sleeping hours.

### COUGH.

69. *R.* Rock candy..... 4 ounces.  
       Vinegar..... 4 "  
       Honey..... 1 ounce.

- Lemon-juice..... 1 ounce.  
       Butter..... 2 ounces.  
       Rum..... 2 "

Warm and simmer well together.

*Dose.*—One teaspoonful, hourly.

70. *R.* Potassium citrate. 1 drachm.  
       Lemon-juice..... 2 ounces.  
       Syrup ipecac..... ¼ ounce.  
       Simple syrup..... 4 ounces.

*Dose.*—A tablespoonful four or six times daily.—H. C. Wood.

### COUGH REMEDY.

71. *R.* Fl. ex. wild cherry. 2 drachms.  
       Simple syrup..... 2 "  
       Glycerine..... 6 "  
       Syrup of tar..... 3 ounces.

*Dose.*—One teaspoonful as required.

### LONDON COUGH SYRUP.

72. *R.* Hops..... 1 ounce.  
       Hoarhound..... 1 "  
       Wild cherry bark..... 1 "  
       Iceland moss..... 1 "

Mix and pour on two quarts of water, simmer to one quart, and add four ounces of pine tar. Stir till nearly cold, and add loaf-sugar, one pound, and good rum, half-pint.

*Dose.*—One teaspoonful as required.

73. *R.* Fl. ext. asclepias tu-  
       berosa..... 1 ounce.  
       Fl. ext. Jamaica dog-  
       wood..... 1 "  
       Tinc. lobelia inflata. 1 "  
       Glycerine..... 1 "

*Dose.*—From ten drops to a teaspoonful, every half hour to three times a day.—DR. ELMORE PALMER.

### CONSTIPATION OF PREGNANCY.

74. *R.* Powdered senna... 2 drachms.  
       Powdered licorice  
       root..... 2 "  
       Powdered fennel  
       seeds..... 1 drachm.  
       Sublimed sulphur.. 1 "  
       Powdered sugar... 6 drachms.

Mix, and one teaspoonful, more or less, makes a pleasant laxative.

75. For constipation in infants try giving two or three times a day, a lump of common brown sugar or a nice raisin. For children an injection of a teaspoonful of glycerine will often bring about a movement of the bowels in fifteen minutes.

AN "EFFERVESCENT APERIENT SALT-  
 ZER" SALT:

76. *R.* Sodium bicarbonate. 2 ounces.  
       Tartaric acid..... 1½ "  
       Rochelle salt..... 1½ "  
       Magnesium sulphate ¾ "

*Dose.*—One or two teaspoonfuls in a glass of water, on rising.

ANOTHER LAXATIVE SALT, like ENOS' (English).

77.  $\mathcal{R}$ . Tartaric acid..... 2 ounces.  
Sodium carbonate... 2 "  
Cream of tartar..... 2 "  
Magnesium citrate.. 2 "  
Epsom salt..... 2 "  
Powdered sugar..... 4 "

*Dose*.—One spoonful or more dissolved in water.

78. HABITUAL CONSTIPATION.—Inject eight ounces of tepid water on retiring and allow it to be retained until absorbed. Increase the quantity progressively each night while lowering the temperature of the water. If necessary, give an ordinary injection in the morning. Four to six weeks suffices to establish unaided defecation.—KLEMPERER.

#### CYSTITIS, INFLAMMATION OF THE BLADDER.

79. Try fluid extract of stigmata maidis (the stigma of maize), one teaspoonful three times a day.—DR. STERN.

Or,

80.  $\mathcal{R}$ . Benzoic acid..... 1 drachm.  
Borax..... 1 "  
Infusion buchu.... 12 ounces.

*Dose*.—One-sixth part of the mixture, three or four times daily, with considerable water or flaxseed-tea.

#### DANDRUFF (OF THE SCALP).

81.  $\mathcal{R}$ . Chloral hydrate.... 1 drachm.  
Glycerine..... 4 drachms.  
Bay rum..... 8 ounces.

As a scalp wash, use two or three times a week.

82. In all scaly conditions of the scalp, and where the hair tends to fall out, Dr. Foote's Magnetic Ointment stimulates better blood circulation, softens and removes scales, allays itching and irritation, and favors growth of hair; if applied at night three times a week, and hair washed next morning with good castile soap-suds.

#### DEPILATORY TO REMOVE SUPERFLUOUS HAIR.

Sanitary Bureau No. 36 is the best means. See page 1230.

83.  $\mathcal{R}$ . Washing soda..... 1 drachm.  
Quicklime.....  $\frac{1}{4}$  "  
Glycerine..... 1 "  
Lard..... 7 drachms.  
Charcoal powder.. 8 grains.

Apply once or twice daily till the hairs come out easily.

Or,

84. A saturated solution of barium sulphide, made into a paste with pow-

dered starch; which paste is applied to the hairy spots, allowed to remain till it causes smarting, then scraped off with a knife, and the part washed with water or some pleasant face wash.

#### DIPHTHERIA.

85. Locally, spray the throat with lime-water; or,

86. A solution of permanganate of potassium; 10 grains in a pint of water; or,

87. Apply locally powdered sulphur (blown in); or,

88. Pepsin in glycerine; or,

89. Glycerite of borax.

90. Put five teaspoonfuls of cubebs (powder) in a steam vaporizer, and convey the steam by a rubber tube to the patient's mouth for inhalation (a French idea).

91. Saturate cotton-wool with lemon-juice and press this against the affected surface four times a day.

#### A SUITABLE GARGLE FOR DIPHTHERITIC SORE THROAT.

92.  $\mathcal{R}$ . Carbolic acid..... 20 drops.  
Acetic acid..... 30 "  
Honey..... 2 drachms.  
Tinc. myrrh..... 2 "  
Water to make... 6 ounces.

#### DISINFECTANTS.

An ordinary wash for sores, ulcers, wounds, etc.:

93.  $\mathcal{R}$ . Carbolic acid..... 1 drachm.  
Water..... 1 pint.

For bed-pans and other utensils:

94.  $\mathcal{R}$ . Labarraque's solution of chlorinated soda. 1 ounce.  
Water..... 1 quart.

For articles of clothing:

95. Boil a solution of one ounce of permanganate of potassium in three gallons of water.

A good deodorizer for privies.

96. One pound of sulphate of iron (common copperas) dissolved in a gallon of water.

Or,

97.  $\mathcal{R}$ . Sulphate of zinc..... 4 ounces.  
Salt..... 2 "  
Water..... 1 gallon.

98.  $\mathcal{R}$ . Thymol..... 6 grains.  
Boric acid..... 30 "  
Oil of eucalyptus. 4 drops.  
Oil of wintergreen 1 drop.

Alcohol..... 4 drachms.  
Glycerine..... 4 "  
Water to make... 1 pint.

No. 98 is for general use externally and internally (in doses of one teaspoonful). Pleasant as a mouth wash, nasal douche, throat spray, or wash for ulcers, sores, boils, etc.

## DROPSY.

99. *R.* Tinc. digitalis..... 1 ounce.  
Tinc. hyoscyamus. ¼ "  
Nitre..... 3 drachms.  
Fl. ext. scutellaria 2½ ounces.

Dose of the mixture, a teaspoonful every three hours.

## DRUNKENNESS.

(To tone up the system, and blunt the appetite for liquor.)

100. *R.* Tinc. nux vomica... 1 drachm.  
Tinc. gentian comp. 2 ounces.  
Tinc. calumba comp 2 "

One teaspoonful before meals as an appetizer.

Or,

101. *R.* Tinc. capsicum..... 1 drachm.  
Tinc. nux vomica... 1 "  
Dilute nitric acid . 1 "  
Water..... 6 ounces.

Dose.—One fluid ounce or two tablespoonfuls three times a day.

For sleeplessness of alcoholism:

102. *R.* Ess. Jam. ginger... 2 ounces.  
Spt. ammon. arom. 2 "  
Tinc. valerian..... 2 "  
Sat. solution potass. "  
brom..... 2 "

M. S. One tablespoonful in water every three to four hours.—C. W. HUNT.

103. A wineglassful of vinegar will sometimes sober a very drunken person in twenty minutes.

## DYSENTERY.

104. *R.* Table salt..... 4 drachms  
Baking soda..... 4 "  
Water..... 1 pint.

Dose.—A wineglassful every two hours.

105. For dysenteric diarrhoea in children, try one drop every hour, in water, of the wine of ipecac.

106. *R.* Carbolic acid..... 10 drops.  
Oil of lemon..... 5 "  
Oil of sassafras..... 5 "  
Syrup rhubarb arom. 1 ounce.

Dose (For adults).—One teaspoonful every three hours.

107. *R.* Oil of turpentine..... 5 drops.  
Fl. ext. of witch hazel 5 "

These ten drops of the mixture on sugar twice a day, night and morning.

## EARACHE.

108. *R.* Oil of sassafras... 20 drops.  
Glycerine..... 2 drachms.  
Olive-oil..... 1 ounce.

A few drops in the canal of the ear, and a bit of cotton to retain it.

109. *R.* Camphor..... 1 drachm.  
Chloral hydrate..... 1 "  
Glycerine..... 2 ounces.  
Oil of almonds..... 1½ ounce.

Use same as No. 108.

110. Try a pinch of black pepper on a bit of cotton, dipped in sweet oil and placed in the ear canal.

111. Drop 10 drops of *Plantago* Major Fluid Extract in the ear; put 15 drops in half a glass of water and give a spoonful of this every half hour.

112. **EAR WAX.**—A safe and rapid method of removing it. Cerumen may be quickly and effectually softened by filling the meatus with peroxide of hydrogen and allowing it to soak for a few moments, after which it may be easily removed by syringing with warm water.

## ECZEMA.

For dry eczema of the scalp, Dr. Piffard recommends a few drops (rubbed in gently) of the following mixture:

113. *R.* Salicylic acid... 20 grains.  
Oil of lavender. 3¼ drachms.  
Oil of citron.... ¼ drachm.  
Oil of pinus syl- "  
vestris..... 2 ounces.  
Oil of castor.... 1½ ounce.

For eczema of the face:

114. *R.* Hydrargyrum ammoniatum..... 5 grains.  
Sulphur..... 10 "  
Petrolatum..... 1 ounce.

Apply as a salve once daily.

For eczema, anywhere:

115. *R.* Tinc. cantharides... 1 drachm.  
Tinc. lobelia..... 1 "  
Fl. ext. hamamelis 1 "  
Glycerine..... 1 ounce.  
Water to make.... 1 pint.

Use as a lotion once daily.

## ERYSIPELAS.

116. Among simple measures that prove useful is the local application of a poultice of cranberries.

Or,

117. Cloths saturated with one drachm of borax in an ounce of glycerine. Apply to the parts affected.

118. Dr. Behrend treated erysipelas in the first stages successfully with a lotion of strong alcohol, 90 per cent., three times a day. No case ever went on to suppuration.

### FOR THE EYES.

**EYE-WATER** for inflamed and granulated lids:

119. *Rx.* Sulphate hydrastia... 2 grains.  
Water..... 1 ounce.

Apply by spray or soft cloth once daily. Or,

120. *Rx.* Sulphate copper... 10 grains.  
Sulphate zinc.... 40 "  
Rose-water..... 2 pints.  
Tinc. saffron..... 4 drachms.  
Spts. camphor... 4 "

Mix and filter.

**EYE-WASH** when the "whites" are inflamed; for "chronic conjunctivitis:—"

121. *Rx.* Acid tannic..... 3 grains.  
Sodii biboratis.... 1 drachm.  
Glycerini..... 2 drachms.  
Aque camphoræ... 4 ounces.

For external use.

**EYE LOTION**, for sties:

122. *Rx.* Spts. camphoræ 15 drops.  
Sulphuris præ-  
cip..... 15 grains.  
Aq. calcis..... 2½ drachms.  
Aq. rosæ..... 2½ "  
Gum acaciæ... 3 grains.

**FAINTING**, or threatened collapse from overheating, overwork, mental shock, etc.:

123. Lay the patient horizontal, with head low, and free the clothing to facilitate breathing, and hand rubbing. For stimulant use aromatic spirits of ammonia, one-half to one teaspoonful in water, administered by the mouth.  
Or,

124. *Rx.* Chloroform..... 1 drachm.  
Lavender water... 11 drachms.

*Dose.*—A teaspoonful.

**FEVERS.**—A suitable thermometer placed under the tongue, with the mouth closed about the instrument, shows, in man, that the

|                             |             |
|-----------------------------|-------------|
| Normal temperature is.....  | 98.4°.      |
| Feverishness varies from... | 99 to 100°. |
| Slight fever ".....         | 100 " 101°. |
| Moderate fever ".....       | 102 " 103°. |
| High fever ".....           | 103 " 105°. |
| Intense fever ".....        | 105 " 107°. |

One degree rise in temperature corresponds generally with an increase of ten beats of the pulse. The normal pulse is about 70 per minute (adults), and the respiration about 18 times per minute. Pulse, respiration, and temperature rise in proportion to fever.

### FEVER BLISTERS.

125. *Rx.* Camphor..... 5 grains.  
Arrowroot, powd. 30 "  
Bismuth subni-  
trate..... 30 "  
Cold cream..... 4 drachms.  
Mix well; for external use.

### FEVER MIXTURES.

126. *Rx.* Potassium citrate. 1 drachm.  
Sweet spirits nitre 5 drachms.  
Syrup of lemon... 5 "  
Liquor ammonium  
acetate..... 2 ounces.

*Dose.*—One teaspoonful every two hours, for a child three years of age; older persons, in proportion of ten drops more for each year added.

127. *Rx.* Tinc. aconite root... 15 drops.  
Water..... 2 ounces.

*Dose.*—(For adults.) One teaspoonful every four hours.

128. *Rx.* Asclepias tuberosa 1 drachm.  
Skullcap..... 1 "  
Lobelia..... 20 grains.  
Capsicum..... 5 "

Infuse in one pint of boiling water, and give one tablespoonful as a mild febrifuge to allay fever.

### FLATULENCE.

Wind on stomach, belching. For adults:

129. *Rx.* Tinc. valerian..... 2 drachms.  
Ether..... 1 drachm.  
Ammonium carbo-  
nate..... 1 "  
Cinnamon water... 2 ounces.  
Water..... 2 "

*Dose.*—One tablespoonful, and repeat in fifteen minutes, if necessary. Or,

130. *Rx.* Myrrh..... 40 grains.  
Capsicum..... 10 "

Make ten pills; one after meals, as required. Or,

131. *Rx.* Tinc. rhubarb..... 1 drachm.  
Bicarb. soda..... 1 "  
Ess. peppermint... 1 "  
Water..... 4 ounces.

*Dose.*—One tablespoonful every hour.

132. *Rx.*

**FOR FETID FEET.**—Use a wash of

Permanganate of  
potassium..... 12 grains.  
Water..... 1 ounce.

Or,

133. *Rx.* Alum..... 1 drachm.  
Boracic acid..... 1 "  
Water..... 2 ounces.

Every other evening apply with soft sponge, right after removing stockings, while feet are moist.

Or, dust into the stockings a powder composed of

134. *R.* Carbolic acid..... 10 grains.  
Salicylic acid..... 10 "  
Burnt alum powd. 1 drachm.  
Starch..... 2 ounces.  
French chalk..... 1 ounce.  
Lemon oil..... 20 drops.

Useful also for sweaty hands.

Sanitary Powder (No. 57 on the list of Sanitary Bureau Articles) is a well-prepared and handy article for the feet, and other skin soreness.

#### FROST BITES.

135. *R.* Oil cajeput..... 4 drachms.  
Chloroform..... 3 "  
Tinc. cantharides 3 "  
Oil cotton-seed to make..... 8 ounces.

Apply to frosted parts on soft cloths.

136. Enclose the part in raw cotton soaked in castor-oil.

#### HAIR TONICS.

137. *R.* Castor-oil..... 2 ounces.  
Bay rum..... 4 "  
Oil bergamot..... 20 drops.  
Tinc. cantharides 4 drachms.  
Carb. ammonium 1 drachm.
138. *R.* Tinc. arnica..... 1 drachm.  
Tinc. cantharides 2 drachms.  
Water of ammonia 4 "  
Bay rum..... 5 ounces.  
Alcohol..... 5 "  
Water..... 5 "
139. *R.* Sulph. quinine... ½ drachm.  
Tinc. cantharides 1 "  
Aromatic spirits ammonia..... 1 ounce.  
Castor-oil..... 1½ "  
Rosemary-oil... 10 drops.  
Bay rum..... 5½ ounces.

**HAIR RESTORATIVES.**—Many proprietary hair restoratives contain from one to five grains of lead to the ounce, and, by constant use, are very liable to bring about lead poisoning. The following dye contains no injurious ingredient:

140. *R.* Hulls of butternuts. 4 ounces.  
Water..... 5 quarts.

Make an infusion, and add an ounce of copperas (sulphate of iron). Apply two or three times a week with a soft old brush.

#### HAIR WASH for Dandruff:

141. *R.* Chloralhydrate..... 1 drachm.  
Ac. tartaric..... 1 "  
Castor-oil..... ¼ "  
Alcohol..... 1 ounce.  
Essentia flor. æth.. 1 "

#### HANDS, Sweaty:

142. *R.* Borax..... 15 drachms.  
Acid salicylic..... 15 "  
Acid boracic..... 5 "  
Glycerin..... ¼ pint.  
Alcohol, dilute..... 12 "

Apply three times a day.—*MODE.*

#### HEADACHES

from acid fermenting stomach.

143. Powdered charcoal, one teaspoonful in a cup of water.  
(Charcoal tablets are a cleaner and more convenient form.)

144. For nervous or rheumatic headache, or that at beginning of a menstrual period, try ten drops of fluid extract of cimicifuga, and repeat the dose every half hour for three hours.

For nervous headache:

145. *R.* Elixir valerianate of ammonium... 2 ounces.  
Sodium bromide.. 4 drachms.

*Dose.*—One teaspoonful in wineglass of water, and repeat in an hour, if necessary.

**HEAD WASH**, for cases of fever with congestion, headache, and throbbing:

146. *R.* Alcohol..... 1 pint.  
Water..... 3 pints.

#### Another Head Wash:

147. *R.* Common salt..... 1 ounce.  
Spirits camphor..... 1 "  
Water of ammonia... 1 "  
Water to make..... 1 pint.

Used externally as a lotion.

#### HEART DISEASE.

148. Three golden rules:

Take exercise, without fatigue,  
Nutrition, without stimulation,  
Amusement, without excitement.

#### HEMORRHOIDS, OR PILES.

149. *R.* Ext. hamamelis virginianæ..... 2 fl. ozs.  
Ext. hydrastis canadensis..... 2 "  
Tinc. benzoin comp.. 2 "  
Tinc. belladonna... ¼ fl. oz.  
Olei olivæ carbolisati (5 per cent.)..... 4 fl. ozs.

Local application.—*ADLER.*

Or, this ointment:

150. *R.* Ungt. belladonnae.. 2 ounces.  
Camphore..... 1 drachm.  
Tr. camph. comp.. 1 "

Apply to painful hemorrhoids.—*NELIGAN.*



# HOARSENESS.

To clear the voice:

151.  $\mathcal{R}$ . Powdered liquor-ice root..... 4 drachms.  
Balsam copaiba... 3 "  
Beeswax..... 2 "

Make into pills of three grains weight each, and use two or three daily.

152.  $\mathcal{R}$ . Benzoic acid..... 6 grains.  
Red currant paste 2 drachms.  
Make twelve troches.

*Dose*.—One every hour or two.—Dr. MORELL MACKENZIE.

# HYSTERIA.

153.  $\mathcal{R}$ . Fluid extract valerian..... 1 ounce.  
Fluid extract sumbul.....  $\frac{1}{4}$  "  
Tinc. castorei..... 4 drachms.  
Spirits chloroform 3 "  
Syrup aurant. cort. 3 "

*Dose*.—One teaspoonful frequently repeated.

# INFLUENZA.

154.  $\mathcal{R}$ . Tinc. cubebæ..... 1 drachm.  
Linseed-tea..... 1 pint.

Take as a drink on retiring.

# ITCH.

For true parasitic itch:

155.  $\mathcal{R}$ . Sulphur (flowers)... 3 ounces.  
Quicklime..... 4 "  
Water..... 2 pints.

Boil together till combined, then allow to cool and settle. Decant and preserve in hermetically sealed bottles. Application: Rub patient all over with soft soap for half an hour, then place in a tepid water bath for another half hour. Next rub over with the solution and allow it to dry on the skin for a quarter of an hour. Complete by washing in the bath.—*Canada Lancet*.

# ITCHING.

156.  $\mathcal{R}$ . Sulphur..... 1 ounce.  
Fluid extract hydrastis Canad..... 1 drachm.  
Fluid extract hamamelis..... 1 "  
Vaseline..... 6 ounces.

Bathe with warm soap and water, and then apply the ointment once every other day.

For itching of the skin, without eruption, or about the privates:

157.  $\mathcal{R}$ . Sodium hyposulphite..... 4 drachms.  
Glycerine..... 2 "  
Water..... 4 ounces.

Use as a wash.

158. Take a warm bath, adding a handful of borax and the same amount of sodium bicarbonate to about thirty gallons of water.

159.  $\mathcal{R}$ . Carbolic acid..... 2 drachms.  
Glycerine..... 1 drachm.  
Rose water..... 8 ounces.

Apply with a sponge.

160. For itching about the anus try local application of balsam of Peru.

161. For itching of urticaria (heat rash and dyspepsia), try two to ten grains of menthol in an ounce of water, sponging with it.

For itching of winter eczema:

162.  $\mathcal{R}$ . Tannic acid..... 1 drachm.  
Glycerine..... 6 drachms.  
Alcohol..... 6 "  
Water to make.... 6 ounces.

Used as a wash.

# PREGNANCY.

To relieve the pains, aches, disquietudes, and nervousness common in pregnancy.

163.  $\mathcal{R}$ . Fl. ex. hyoscyamus 1 drachm.  
Oil sassafras.....  $\frac{1}{4}$  "  
Fl. ex. juglan..... 7 drachms.  
Sodium bicarbonate..... 2 "  
Simple syrup.....  $\frac{1}{4}$  pint.

*Dose*.—A teaspoonful four times a day, or double that dose, as required to keep the bowels moving well.

# IVY POISONING.

164. Bathe the inflamed surfaces with a decoction of oak leaves, or bone-set, or of hemlock boughs.

Or,

165. A saturated solution of potassium chlorate, or of sodium bicarbonate.

Or,

166. Apply glycerite of tannin, or oil of sassafras to the eruption.

Or,

167.  $\mathcal{R}$ . Carbolic acid..... 1 drachm.  
Strong ammonia water.....  $\frac{1}{4}$  "  
Olive-oil..... 8 ounces.

Apply on soft cloths.

168.  $\mathcal{R}$ . Salicylic acid..... 1 drachm.  
Olive-oil..... 2 ounces.

For external use.

# LICE.

169. A safe and good wash for children's heads consists simply of a tea or decoction of quassia-wood chips.

170. Tinc. staphisagria, only as a wash, with care. (Fatal to "crabs.")

#### LUMBAGO.

171. Try the essence of spruce in teaspoonful doses three or four times daily.

172. For external use nothing equals Dr. Foote's Magnetic Ointment, though the fluid or lotion pain-killers listed farther on are all applicable.

**MAN.**—How to make a man of the ultimate elements of which he is composed:

|         |            |            |
|---------|------------|------------|
| 173. R. | Oxygen     | 97 pounds. |
|         | Carbon     | 48 "       |
|         | Hydrogen   | 15 "       |
|         | Nitrogen   | 4 "        |
|         | Calcium    | 3 "        |
|         | Chlorine   | 28 ounces. |
|         | Fluorine   | 3¼ "       |
|         | Phosphorus | 2.6 "      |
|         | Sulphur    | 2¼ "       |
|         | Potassium  | 2 "        |
|         | Sodium     | 2¼ "       |
|         | Iron       | 1¼ "       |

Mix well and add life.

#### MALARIA.

174. To ward it off, take a whole lemon, cut in slices, boil in three glassfuls of water down to one glassful, which take during one day.

#### MALARIAL FEVER.

|         |          |            |
|---------|----------|------------|
| 175. R. | Sulphur  | 90 grains. |
|         | Camphor  | 3 "        |
|         | Capsicum | 1 grain.   |

Make six powders and take one three times a day.

This was found very useful in Red Cross work in Cuba by Dr. A. Monale Lesser, of New York.

#### MENSTRUATION, TARDY.

176. Try a tablespoonful of black mustard-seed in milk at bed-time.

#### MENSTRUATION, EXCESSIVE.

177. Sucking the juice of one or two lemons is a valuable remedy for excessive menstrual flow.

178. For "painful periods," try an infusion of life everlasting (gnaphalium) flowers, one-half ounce of the flowers in one-half pint of hot water. Divide the tea or infusion in four parts: take the first dose of one-fourth at first symptom of distress, and the remaining parts one every three hours.—J. T. McSHANE, M.D.

179. For "painful periods," try half teaspoonful doses of fluid extract of witchhazel, in sweetened water, three times a day.

#### MOSQUITO BITES.

For local use:

|         |               |            |
|---------|---------------|------------|
| 180. R. | Carbolic acid | 30 grains. |
|         | Glycerine     | 3 drachms. |
|         | Camphor water | 8 ounces.  |

#### MOUTH WASH, OR GARGLES.

|         |                   |            |
|---------|-------------------|------------|
| 181. R. | Borax             | 2 drachms. |
|         | Powdered myrrh    | 1 drachm.  |
|         | Water             | 4 ounces.  |
| 182. R. | Powdered borax    | 1 ounce.   |
|         | Honey of rose     | 2 ounces.  |
|         | Infusion of roses | 6 "        |
| 183. R. | Tannin            | 2 drachms. |
|         | Alcohol           | 1 drachm.  |
|         | Camphor water     | 4 ounces.  |

One tablespoonful in water for gargle.

Or,

184. Glycerite of tannin, a tablespoonful to a cup of water.

#### NAUSEA OF PREGNANCY.

|         |                |            |
|---------|----------------|------------|
| 185. R. | Ingluvin       | 24 grains. |
|         | Oxalate cerium | 24 "       |

Make six powders, and take one in water every four hours.

Or,

|         |               |           |
|---------|---------------|-----------|
| 186. R. | Calumba root  | ½ ounce.  |
|         | Ginger root   | ½ "       |
|         | Fenna leaves  | 1 drachm. |
|         | Boiling water | 1 pint.   |

Make an infusion, and take a wine-glassful before each meal.

Or,

|         |                |          |
|---------|----------------|----------|
| 187. R. | Cerium oxalate | 1 grain. |
|         | Ipecac         | 1 "      |
|         | Creosote       | 2 drops. |

Or,

188. R. Eat pop-corn; chew well.

#### NERVOUSNESS.

|         |                  |          |
|---------|------------------|----------|
| 189. R. | Tinc. scullcap   | 1 ounce. |
|         | Tinc. valerian   | 1 "      |
|         | Tinc. hyoscyamus | 1 "      |
|         | Spirits lavender | 1 "      |

Dose.—One teaspoonful three times a day.

|         |                             |          |
|---------|-----------------------------|----------|
| 190. R. | Fl. ext. cypripedium        | 1 ounce. |
|         | Fl. ext. asclepias tuberosa | 1 "      |
|         | Fl. ext. skunk cabbage      | 1 "      |
|         | Fl. ext. scullcap           | 1 "      |

Dose.—One-half to one teaspoonful three times a day.

NEURALGIA OF THE STOMACH.

191. Take a tablespoonful of black mustard-seed before meals. Moisten well with saliva before attempting to swallow the seeds.

192. Tinc. iux vomica, one-drop doses every half hour.

NEURALGIA, for external use as an anodyne, the following :

193. ℞. Chloroform ..... 1 ounce.  
Camphor..... 1 "  
Chloral hydrate..... 1 "

At the same time:

194. ℞. Ammonium car-  
bonate ..... 5 grains.  
Ammonium chlor-  
ide..... 20 "  
Peppermint water 7 drachms.  
Mucilage..... 1 drachm.

Mix and take in one dose internally.

195. Try internally a tea of common field thistle (leaves), and externally a poultice of the same.

NEURALGIA—for internal use:

196. ℞. Potassii nitratis... 4 drachms.  
Aqua camp..... 1 ounce.

One teaspoonful in half a wineglassful of water every fifteen minutes until relieved.—Dr. T. S. LANE.

NIGHT-SWEATS OF PHTHISIS  
(CONSUMPTION).

Sponge the surface of the body with:

197. ℞. Chloral hydrate... 2 drachms.  
Alcohol..... 3 ounces.  
Water..... 3 "

Or,

198. ℞. Quinine sulphate..... 5 grains.  
Water ..... 1 pint.

Lotion for a sponge-bath.

NIPPLE OINTMENT.

For sore, inflamed or cracked nipples.  
—CAZEAX.

199. ℞. White wax..... 4½ ounces.  
Oil of sweet al-  
monds..... 1 ounce.  
Clarified honey.. ½ "  
Balsam Peru..... 2½ drachms.

200. Dr. Foote's Magnetic Ointment is unsurpassed in affections of breasts and nipples.

NOSE-BLEED.

201. Snuff powdered alum up the nostrils. Cork up the nostrils with soft tissue paper.

202. The injection of a glass syringe-ful of lemon-juice into the nose, after it has been cleansed of clots, will stop bleeding after everything else has failed.

203. For scaly condition of nasal mucous membrane predisposing to bleeding, use Dr. Foote's Magnetic Catarrh Balm—cleansing, softening, and healing.

PAIN KILLERS.

For external use:

204. ℞. Myrrh gum..... 1 ounce.  
Capsicum..... 2 drachms.  
Camphor..... 8 "  
Opium gum..... 1 drachm.  
Gualac..... 1 "  
Alcohol..... 1 pint.

Mix thoroughly.

205. ℞. Wintergreen oil.  
Soap liniment.

Mix equal parts.

206. ℞. Camphor..... ¼ ounce.  
Oil of turpentine... 1 drachm.  
Oil of peppermint.. ¼ "  
Oil of wintergreen.. ¼ "  
Tinc. capsicum..... ½ ounce.  
Alcohol to make... 1 pint.

Often put up and sold as "Indian Oil."

207. ℞. Oil of sassafras... 2 ounces.  
Oil of olives..... 2 "  
Camphor..... 2 "  
Chloroform..... 2 "  
Spirits of turpen-  
tine..... 12 "  
Capsicum..... 1 drachm.

Dissolve the camphor in chloroform, add the oils, and lastly the capsicum and spirits of turpentine.

208. ℞. Tinc. capsicum..... 1 drachm.  
Oil of origanum... ¼ ounce.  
Oil of sassafras... ¼ "  
Oil of pennyroyal.. ¼ "  
Oil of hemlock..... ¼ "  
Alcohol..... 1 quart.

A handy and efficient one:

209. ℞. Red pepper..... 1 drachm.  
Salt..... ½ ounce.  
Vinegar..... 1 "  
Water..... 1 "

PRURITUS VULVÆ, ITCHING OF  
THE PRIVATES.

210. Try a sponge soaked in boiling water.

211. Try linseed oil, locally.

212. ℞. Carbolic acid..... 1 drachm.  
Boric acid..... 2 drachms.  
Morphia sulphate 10 grains.  
Petrolatum ..... 2 ounces.

Apply as a salve.—Dr. W. GOODELL.

## FOR PRURITUS OF PREGNANCY.

213. *R.* Thymol..... 15 grains.  
 Petrolatum..... 30 "  
 Powdered brick  
 clay..... 3 ounces.

For local use.—Dr. M. A. Pallen.

## RAT POISON.

214. Rat poisons are said to be composed of white arsenic mixed with cornmeal and lampblack.

215. Peppermint scattered in the resorts of rats makes them quit in disgust.

## RHEUMATISM, ACUTE.

216. Try application to painful part of brown paper steeped in vinegar.

Or,

217. A flannel cloth wrung out in vinegar, place over the affected muscles, and press over the flannel with a hot flat-iron.

218. *R.* Tinc. bik. cohosh 2 drachms.  
 Tinc. colchicum  
 seeds..... 2 "  
 Tinc. gelsemium 2 "  
 Sweet spirits of  
 nitre..... 10 "  
 Essence winter-  
 green..... 2 "  
 Simple syrup.... 8 ounces.

*Dose.*—One to two teaspoonfuls every four hours, in inflammatory rheumatism.

An agreeable alkaline drink for use once in two or three hours, in acute rheumatism, is made by combining the two following mixtures, or solutions, which effervesce when combined—to be taken while effervescing:

219. *R.* Potassium carbon-  
 ate..... 30 grains.  
 Water..... 3 ounces.

To be mixed with

- Citric acid..... 25 grains.  
 Water..... 3 ounces.

*Dose.*—The whole, when combined.

## RHEUMATISM OF THE JOINTS.

220. *R.* Acid. salicylic..... 1 ounce.  
 Olei terebinthinae... 1 "  
 Lanolin..... 3 ounces.  
 Ung. paraffin..... 5 "

Apply externally.—Ziemssen.

## FOR RHEUMATISM.

A liniment for outward application:

221. *R.* Oil sassafras..... 2 fl. ounces.  
 Oil wintergreen... 2 "

- Chloroform..... 2 fl. ounces.  
 Ammonia water... 2 "  
 Camphor spirits... 4 "  
 Tinc. capsicum... 1 fl. ounce.

## RING-WORM.

222. Moisten cigar-ashes to a paste and apply to part, and repeat till the "ring" fades away.

Wash with soft soap, and apply a lotion of

223. *R.* Iodine..... 10 grains.  
 Turpentine..... 1 ounce.

Or,

224. *R.* Sodium hyposul-  
 phite..... 1 drachm.  
 Water..... 1 ounce.

Use as a lotion to the part.

225. *R.* Chrysophanic  
 acid..... 1 drachm.  
 Petrolatum..... 10 drachms.

For local use as a salve, and parasiticide.

226. *R.* Calomel..... 1 drachm.  
 Tinc. iodine..... 1 ounce.

Paint the ring-worm with this solution, using camel's-hair brush.

227. *R.* Boracic acid..... 1 drachm.  
 Water..... 1 ounce.

Apply freely and let it dry on.

## SICK-HEADACHE.

228. Try a cup of strong catnip-tea, and repeat in two hours, if not relieved sooner.

229. Dr. Foote's Magnetic Vegetable Anti-bilious Pills are generally a specific for sick-headaches.

## SMALL-POX.

230. Two tablespoonfuls of common vinegar, with or without water, taken twice daily, one hour after breakfast, and again toward evening, is highly recommended as a prophylactic (preventive) against small-pox.

SOOTHING SYRUP WITHOUT  
OPIATE.

231. *R.* Peppermint water 5 drachms.  
 Tinc. Virginia  
 snake-root..... 2 "  
 Tinc. gold thread. 1 drachm.  
 Syrup orange peel. 1 ounce.

*Dose.*—For a two-year-old child, one-half a teaspoonful, repeated two or three times in an hour, if necessary.—Dr. A. T. HALEY.

### SPAVIN CURE.

(Probably as good as any.)

232. *R.* Camphor..... 21 drachms.  
Water..... 30 "  
Iodine..... 5 "  
Oil turpentine..... 30 "  
Oil rosemary..... 1 drachm.  
Alcohol..... 24 ounces.

Dissolve the iodine and oils in the alcohol before adding the water.

### STOMACH-ACHE.

SQUER'S COMPOUND RHUBARB MIXTURE, for children's stomach-aches with fermentation, foul breath, etc.

233. *R.* Fl. ext. rhubarb... 1 drachm.  
Fl. ext. ipecac.... 15 drops.  
Sodium bicarb.... 2 drachms.  
Glycerine..... 3 ounces.  
Peppermint water 4 "

Dose.—One-half to one teaspoonful two or three times daily.

### SWEATING HANDS, FEET, ETC.

234. *R.* Boric acid..... 5 parts.  
Borax..... 15 "  
Salicylic acid..... 15 "  
Glycerine..... 60 "  
Dilute alcohol..... 60 "

Mix. Rub on three times a day.

### TAPEWORM ROUTER.

235. *R.* Male fern ext.... 1½ drachm.  
Kamala powder. 2 drachms.  
Mucilage gum arabic..... 2 "  
Cinnamon water to make..... 8 ounces.

Mix and take one-half the mixture at bed-time, and the remainder the next morning.

### TONSILITIS.

236. Give fifteen drops of ammoniated tincture of gualac every four hours on a lump of sugar.

237. Moisten the finger with water, dip it in powdered bicarbonate of soda, and touch this gently to the tonsils; repeat every five minutes for half an hour, and then only once an hour.

### TOOTH WASH.

Like sozodont, to be used with a brush.

238. *R.* White Castile soap..... 4 drachms.  
Glycerine..... 4 "  
Alcohol..... 14 "  
Water..... 8 "  
Peppermint oil... 1 drachm.  
Anise oil..... 32 drops  
Cinnamon oil... 16 "  
Clove oil..... 4 "

### TOOTH POWDER.

To make one ounce:

239. *R.* Boracic acid..... 40 grains.  
Potassium chlorate. 30 "  
Resin gualac..... 30 "  
Prepared chalk..... 60 "  
Magnesium carbonate..... 330 "

240. *R.* Pulv. castile soap. 4 drachms.  
Pulv. prepared chalk..... 8 "  
Pulv. pumice-stone ¼ drachm.  
Oils wintergreen and sassafras... 2 to 5 drops.

Very largely used.

### TOOTHACHE.

241. Oil of cloves, or oil of cajuput, on lint, in the hollow of the tooth.

242. Chew cinnamon bark.

### ULCERS OF THE LEG.

243. *R.* Carbolic acid... 30 grains.  
Boric acid..... 2½ drachms.  
Powd. camphor 2 "  
Ichthyol..... 5 "  
Oil of sweet almonds..... 2½ "  
Zinc ointment.. 3 ounces.

Mix. Apply topically.—ELDEN.

### WHOOPIING COUGH.

244. Five-drop doses of tincture of eucalyptus three times a day, as an internal medicine.

245. *R.* Dried thyme..... 6 ounces.  
Boiling water..... 1 pint.

Infuse for ten minutes, sweeten to the taste, and give a tablespoonful every hour.

246. Make a tea of red clover blossoms and give freely through the day.—HAYDEN.

247. *R.* Ammonium bromide..... 1 drachm.  
Tinc. belladonna. ¼ "  
Mixture liquorice comp..... 1 ounce.  
Syrup of tolu..... 2 ounces.

Dose.—A teaspoonful every three hours for a child of five years.

248. Drop oil of turpentine on the pillow where its vapors will be inhaled by the patient, and during distressing, convulsive cough hold a handkerchief wet with fifteen or twenty drops before the child's face.

249. Try oxalate of cerium, once a day, before breakfast, in doses of one-half grain, for a child of one year, up to five grains for one of seven years; more especially useful in second stage of spasmodic cough.

## WARTS.

## Constitutional treatment.

250. *R. Tinc. thuja occidentalis.**Dose.*—Half a teaspoonful three times a day.

Locally, that is, externally.

251. Try a mixture of equal parts of glacial acetic acid and iodine, applied with a camel's-hair brush night and morning, avoiding touching the healthy skin.

Or,

252. Try dusting on twice daily a powder of equal parts of tannin and burnt alum. (This is safe and sure for venereal warts.)

## WORMS: PIN WORMS.

253. *R. Quassia*..... 2 drachms.  
*Acid. salicylic*..... 10 grains.  
*Water*..... 1 pint.

Use as an injection once daily.

## TO EXPEL ROUND WORMS.

254. *R. Santonin*..... 16 grains.  
*Fluid extract senna*. 1 ounce.  
*Fluid extract spigelia*..... 1 “One *small* teaspoonful of the mixture by the mouth to a child of five years, at bed-time, or half the dose to younger children.

## A POPULAR VERMIFUGE.

255. *R. Wormseed*..... 2 ounces.  
*Valerian*..... 1½ ounce.*Rhubarb*..... 1¼ ounce.  
*Pink-root*..... 1½ “  
*White agaric*..... 1½ “Boil in three quarts of water, and add  
*Oil of tansy*..... 30 drops.  
*Oil of cloves*..... 45 “*Dose.*—A teaspoonful three times daily.

## WRINKLES.

These tell-tale marks of time are caused by the diminished elasticity of the skin and by loss of water from the tissues as age advances; and thus the creases that in youth leave no mark, become in after years permanent. In an infant the amount of water in the tissues is 66.4 per cent. while, as years advance, it forms but about 58.5 per cent. It is absurd to fill the furrows up with powder and paste in an attempt to hide them. The better way is to preserve the elasticity of the skin by hygienic means, especially between the ages of twenty and thirty. Where the lines tend to become prematurely permanent, “a mixture of cold cream and *adeps lanae* should be rubbed in twice a day.” “Retiring cream,” having as its base wool-fat, readily penetrates the skin and renders it soft, smooth, and supple. It is made according to this formula:

256. *R. Expressed oil of*  
*almonds*..... 2 drachms.  
*Cacao butter*..... 4 “  
*Wool fat*..... 3 ounces.  
*Glycerin*..... 2 drachms.  
*Oil of rose*..... 2 drops.Melt the first three ingredients by means of heat, then add the others.—  
O. B. SALISBURY.

Among the advertising pages at the back of this book may be found a list of ready-made household articles in cheap and convenient form to supply many needs in the line of common ailments, or minor emergencies. Well prepared and strictly sanitary toilet articles are included in the list, as well as a few very serviceable surgical goods, supporters, syringes, etc.

Some of the above, it would be well for every family to have at hand at all times, while others need only be sent for when the need is felt.





**Antidotes for Poisons.**

This schedule is based on a paper by John S. Dunn, Ph.C., read before the Michigan State Pharmaceutical Association. It is the recommendation of Drs. A. B. Lyons, O. Eberbach, G. W. Stringer, a committee to whom Mr. Dunn's paper was referred. The report in full will be found in the *Pharmaceutical Record*, 1886, pp. 88, 89.

**GROUP 1.**—*Acids: Acetic, Muriatic, Nitric, Nitro-Muriatic, Sulphuric.*

**GROUP 1.**—Give no emetic. Give at once large draughts of water (or milk) with chalk, whiting, magnesia, or baking soda; or give strong soap-suds, to neutralize acid; olive-oil, white of egg, beaten up with water, and, later, mucilaginous drinks of flaxseed or slippery-elm are useful. Give laudanum (20 drops) if much pain.

**GROUP 2.**—*Carbolic Acid, Creosote, Resorcina.*

**GROUP 2**—Promote vomiting with warm water containing baking soda, or cause it with mustard (a tablespoonful stirred to a cream with water). Give white of egg beaten up with water, or olive-oil (a cupful); stimulants (whiskey, etc.) freely; warmth and friction to the extremities.

**GROUP 3.**—*Antimony, salts of; Cantharides, Colchicum, Elaterium, Iodine, and their preparations; Copper, salts of; Mercury, salts of; Oils of Croton, Savin, and Tansy; Potassium Bichromate; Tin, muriate of; Zinc, salts of.*

**GROUP 3.**—Give white of eggs ( $\frac{1}{2}$  dozen or more, raw), or flour mixed with water. Promote vomiting with warm water containing baking soda, or cause it with mustard (a tablespoonful stirred to a cream with water). Give strong tea or coffee; stimulants, if needed; laudanum (20 drops), if much pain; demulcent drinks of flaxseed or slippery elm.

**GROUP 4.**—*Caustic Alkalies and Ammonia.*

**GROUP 4.**—Promote vomiting by large draughts of warm water. Give vinegar or diluted lemon-juice; olive-oil; the whites of eggs beaten up with water; gruel, or demulcent drinks of flaxseed or slippery elm; laudanum (20 drops), if much pain.

**GROUP 5.**—*Cannabis Indica and its preparations; Morphine and its salts; Opium and its preparations (except paregoric).*

**GROUP 5.**—Give emetic (if necessary) of mustard (a tablespoonful stirred to a cream with water), followed by large draughts of warm water. Then strong tea or coffee. Arouse the patient, and keep him

awake and in motion. Keep up artificial respiration even after life seems to be extinct.

GROUP 6.—*Acid Hydrocyanic (prussic) and all Cyanides; Alcohol; Benzine; Benzole; Camphor; Carbon Disulphide; Chloral Hydrate; Chloroform; Ether; Oil of Bitter Almond; Oil of Mirbane; Sulphurets of the Alkalies.*

GROUP 6.—If necessary, give emetic of mustard (a tablespoonful stirred to a cream with water). Let patient have plenty of fresh air; maintain a horizontal position. Keep the body warm, but try to rouse patient by ammonia to nostrils, cold douche to head, friction and mustard plasters to limbs, etc. Use artificial respiration.

GROUP 7.—*Aconite, Aconitine, Cotton Root, Digitalis, Ergot, Lobelia, Tobacco, Veratrum (Hellebore), Veratrine, and all preparations containing any of the foregoing articles.*

GROUP 7.—Give emetic of mustard (a tablespoonful stirred to a cream with water), followed by large draughts of warm water. Give strong tea or coffee, with powdered charcoal; stimulants (whiskey, etc.) freely; warmth to the extremities; keep the patient in a horizontal position; use artificial respiration persistently.

GROUP 8.—*Atropine and its salts; all preparations containing Belladonna, Calabar Bean, Gelsemium (Yellow Jasmine), Hemlock (Conium), Henbane, Jaborandi, Pilocarpine and its salts, Santonine, Stavesacre Seed, Stramonium.*

GROUP 8.—Give emetic of mustard (a tablespoonful stirred to a cream with water), followed by large draughts of warm water; give strong tea or coffee, with powdered charcoal; stimulants (whiskey, etc.) if necessary; rouse the patient if drowsy; heat and friction to extremities; artificial respiration.

GROUP 9.—*Cocculus Indicus; Nux Vomica and its preparations; Strychnine and its salts.*

GROUP 9.—Give emetic of mustard (a tablespoonful stirred to a cream with water), followed by large draughts of warm water. Give powdered charcoal, iodide of starch or tannin. To relieve spasms let the patient inhale pure chloroform, or give chloral hydrate (25 grains), or potassium bromide ( $\frac{1}{2}$  ounce). Lose no time.

GROUP 10.—*Arsenic and all its compounds; Cobalt (arsenical fly-powder).*

GROUP 10.—Promote vomiting with warm water, or cause it with mustard (a tablespoonful stirred to a cream with water). Procure at once from a drug-store, hydrated oxide of iron, and give a cupful of it (or mix a teaspoonful of calcined magnesia with a cupful of water, add

## RULES FOR RESUSCITATING THE DROWNED. 801

three teaspoonfuls of tincture of iron, mix well and give the whole of it). Follow with olive-oil, or whites of eggs (raw) and mucilaginous drinks. Laudanum (20 drops), if much pain.

### GROUP 11.—*Oxalic Acid and its salts.*

GROUP 11.—Give chalk or whiting (a tablespoonful), or even air-slacked lime (a teaspoonful in fine powder) mixed with two tablespoonfuls of vinegar (do *not* give soda or potash to neutralize the acid). Promote vomiting by large draughts of water, or cause it with mustard (a tablespoonful stirred to a cream with water). Give olive-oil and mucilaginous drinks; stimulants (whiskey, etc.) and warmth to extremities.

### GROUP 12.—*Barium, salts of; Lead, salts of.*

GROUP 12.—Give Epsom salt ( $\frac{1}{2}$  ounce) or Glauber's salt (1 ounce) dissolved in a tumblerful of water. Promote vomiting by warm water, or cause it with mustard (a teaspoonful stirred to a cream with water). Give milk, demulcent drinks of flaxseed or slippery-elm, and laudanum (20 drops), if much pain.

### GROUP 13.—*Silver, nitrate of.*

GROUP 13.—Give common salt (a tablespoonful dissolved in a tumblerful of warm water); then an emetic of mustard (a tablespoonful stirred to a cream with water), followed by large draughts of warm water. Later, give gruel, arrow-root, or demulcent drinks of flaxseed or slippery elm.

### GROUP 14.—*Phosphorus (rat-paste).*

GROUP 14.—Give an emetic of mustard (a tablespoonful stirred to a cream with water), or better, of blue vitriol, 3 grains every five minutes, until vomiting occurs. Give a teaspoonful of old, thick oil of turpentine; also, Epsom salt (one-half ounce in a tumbler of water). Do *not* give oil, except the turpentine.

## Rules for Resuscitating the Drowned.

AS ADOPTED BY THE HEALTH DEPARTMENT OF THE CITY OF  
NEW YORK.

REMEMBER that the patient must be treated instantly, and on the spot where rescued. He must be freely exposed to the open air; loosen the clothing so as to freely expose the neck and chest. All persons not needed for saving him should avoid crowding about.

1. Let the throat and mouth be cleansed by placing the patient gently, face downward, with one of his wrists under his forehead. Quickly wipe and cleanse the mouth, and if the patient does not breathe, immediately begin the following movements;

**2. POSTURE.**—Place the patient on his back, with shoulders raised, and supported easily on a folded coat or some kind of pillow.

**3. TO KEEP UP A FREE ENTRANCE OF AIR INTO THE WINDPIPE.**—Let one person at the patient's head, grasp the tongue gently and firmly with his fingers, covered with a bit of handkerchief, and draw it out beyond the lips; then either hold it or press the under jaw (chin) up so as to retain the tongue protruding from the mouth; but it is better to hold it in that position with the hand.

FIG. 261.



These engravings show how to *give breath* to a person rescued from the water and apparently dead. The posture in which the patient is to be laid (face down and wrist under the forehead) for a moment, as soon as he is taken out of the water, is not shown here. [See 1st Rule.]

The movements here shown for one side of the patient must be made on both sides, by two persons working together.

These *figures* show how one of the two men works.

*Fig. 1* shows the long and strong pull, for opening the chest to let fresh air in.

*Fig. 2*, next page, shows how to make the strong side and front pressure to drive the air out of the lungs.

*Fig. 3* shows how the tongue is to be held.

**4. TO PRODUCE AND IMITATE THE MOVEMENTS OF BREATHING.**—Raise the patient's extended arms upward to the sides of his head, and then pull them steadily, firmly, slowly, outward. Next turn down the elbows by the patient's side, and bring the arms closely and firmly across the pit of the stomach, and press them and the sides and front

## RULES FOR RESUSCITATING THE DROWNED. 803

of the chest gently but strongly for a moment, then quickly begin to repeat the first movement.

5. Let these two kinds of movements be made very deliberately and without ceasing until the patient breathes, and let the two movements be repeated about twelve or fifteen times in a minute, but not more rapidly, remembering that to thoroughly fill the lungs with air is the object of the first, or upward and outward, movement, and to expel as much air as possible is the object of the second, or downward, mo-

FIG. 202.



tion and pressure. This artificial respiration should be steadily kept up for forty minutes or more, when the patient appears not to breathe; and after the natural breathing begins, let the same motion be very gently continued, and let the proper stimulants be given in the intervals.

### WHAT ELSE IS TO BE DONE, AND WHAT IS NOT TO BE DONE WHILE THE MOVEMENTS ARE BEING MADE.

If help and blankets are at hand, have the body stripped, wrapped in blankets, but do not allow the movements to be stopped. Bystanders can supply dry clothing; and the assistants should briskly rub the feet and legs, pressing them firmly and rubbing upward, while the movements of the arms and chest are going on. Apply hartshorn or a feather within the nostrils occasionally, and sprinkle or lightly dash cold water upon the face and neck. The legs and feet should be rubbed and wrapped in hot blankets, if blue or cold, or if the weather is cold.

**WHAT TO DO WHEN THE PATIENT BEGINS TO BREATHE.**

Give brandy by the teaspoonful or hot sling two or three times a minute, until the beating of the pulse can be felt at the wrist, but be careful and not give more of the stimulant than is necessary. Warmth should be kept up in the feet and legs, and as soon as the patient breathes naturally, let him be carefully removed to a house, and be placed in bed under medical care.

**The Care of Babies.**

We can cheerfully recommend the following thirteen rules—issued under the auspices of the French Academy of Medicine—for the care of infants :

1. During the *first year* the only suitable nourishment for an infant is its own mother's milk, or that of a healthy wet-nurse. Suckling should be repeated every two hours—*less* frequently at night.

2. When it is impossible to give breast milk, either from the mother or a suitable nurse, cow's or goat's milk given tepid, reduced at first one-half by the addition of water slightly sweetened, and after a few weeks one-fourth only, is the next best substitute.

3. In giving milk to an infant always use glass or earthenware vessels, not metallic ones, and always observe the most scrupulous cleanliness in their management, rinsing whenever used. Always avoid the use of teats of cloth or sponge, so frequently employed to appease hunger or quiet crying.

4. Never forget that artificial nourishment, whether by nursing bottle or spoon (without the breast), increases to an alarming degree the chances of producing sickness and death.

5. It is always dangerous to give an infant, especially during the first two months of its life, solid food of any kind—such as bread, cakes, meats, vegetables, or fruit.

6. Only after the *seventh* month, and when the mother's milk is not sufficient to nourish the child, should *broths* be allowed. After the first year is ended, then it is appropriate to give broth or paps made with milk and bread, dried flour, rice, and the farinaceous articles, to prepare for weaning. A child ought not to be weaned until it has cut its first twelve or thirteen teeth, and then only when in perfect health.

7. A child should be washed and dressed every morning, before being nursed or fed. In bathing a child, temper the water to the weather, carefully cleanse the body, and especially the genital organs, which require great cleanliness and care ; and the head should be carefully freed from all scabs and crusts which may form. Where the belly-band is used, it should be kept on for at least one month.



8. An infant's clothing should always be so arranged as to leave the limbs freedom of motion, and not to compress any portion of the body.

9. An infant's clothing should always be studiously adapted to the weather, avoiding at all times exposure to the injurious effects of sudden changes in temperature without proper covering ; but nurseries and sleeping apartments should invariably be well ventilated.

10. An infant should not be taken into the open air before the fifteenth day after birth, and then only in mild, fair weather.

11. It is objectionable to have an infant sleep in the same bed either with its mother or nurse.

12. No mother should be in too great a hurry to have a child walk ; let it crawl and accustom itself to rising on its feet by climbing on articles of furniture, or assisted by the arms of a careful attendant. Great care should be taken in the too early use of baby wagons, etc.

13. In cases of suspected pregnancy, either of mother or nurse, the child should be weaned at once.

Before concluding this chapter the reader should be reminded that there are many good points for the guidance of parents in the care of babies in the essay entitled *How to Preserve the Health of Children*, in Part I. If any parent reading the foregoing rules have not perused it I would commend it to his or her attention. Next to having a clear conscience there is nothing that can give greater comfort and cheer to a mother than a *healthy* family of children.



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A FEW LAST REMARKS  
ON  
MEDICAL SPECIALISTS—THEIR FUNCTIONS AND METHODS.

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The following excerpt from the Philadelphia *Polyclinic* is given as evidence of growing rationalism in old-school circles on the subject of specialism in modern medical practice. The necessity of some means of advertising as an accompaniment of its development is acknowledged, and the propriety of direct or straightforward methods, in place of prevalent roundabout ways, is pretty distinctly intimated. Maybe some day we will awake to find that in this, as well as other progressive ideas, we have been simply leading the procession and setting the style, when some thought we were pursuing an erratic or irregular course :

“The increase of specialism can only go on as the specialist is able to draw on a larger number of people for his support, and to do this he must in some way acquaint that larger number with himself and his work. Extending this acquaintance is the legitimate function of advertising. Specialism and advertising of some sort necessarily go together. This connection is neither recent nor local, nor temporary. When the doctor gave up his farming or storekeeping, he put out a sign and got a degree, setting forth what sort of work he expected to do, and assumed a professional demeanor, all calculated to extend in the community the knowledge of what service he was prepared to render. And with large numbers of people to be reached, and new means at hand by which to inform them of his existence, no ‘conservatism’ on the part of those who fail to recognize the continuous forward flow of events will prevent the adoption of new methods of advertising.

“By the later specialists, teaching and hospital positions have been eagerly sought for their supposed advertising value, and the article in the medical journal has become a part of the routine task of the aspirant in this direction, until the profession and the community are both suffering from the multiplicity of medical schools and hospitals, and legitimate medical literature is drowned in the torrent of medical writing. And still the professors and holders of official positions are certifying nostrums and ‘mineral waters,’ being interviewed by the ubiquitous reporter, and in every way struggling to have their names floated to a still larger circle of possible patients.

“There can be no question but that specialization, in so far as it is normal, is progress ; *that the community is better served, more cheaply and satisfactorily served, by legitimate specialists than by jacks-of-all-trades.* Specialism is bound to extend, and for the evils its attempts at advertising now inflict, no more legitimate remedy will be found than proper and efficient means of accomplishing this necessary function,



When Dr. Smith can otherwise let the community know that he is prepared and desires to practise ophthalmic surgery, his desire for a professorship or a hospital service, irrespective of his aptitude for teaching or his interest in studying hospital cases, will be greatly moderated; the true teacher and clinical student will have a correspondingly better chance, and mushroom medical schools and new hospitals will be less of a burden in the land."

The specialist is confronted with another prejudice existing to some extent in the public mind and which is professedly, though we think not sincerely, entertained by the average physician. It is that a specialist living, say in the city of New York, cannot successfully attend to some case of chronic disease in Chicago, San Francisco, or Australia. It will be conceded instantly that in all cases of acute disease a physician must be close at hand. In five minutes' time the symptoms may change in such a way as to require immediate attention. But this is not true of chronic diseases. There are many having chronic diseases who will even assume to treat themselves by resorting to some domestic remedies, or by going to the drug-store and purchasing some proprietary nostrum. With no knowledge of medicine whatever, they guess at the nature of the complications affecting them, and then guess again as to the remedy which would probably be the best suited to their complaints. It need not be said that this is tampering with one's self. A person is quite at liberty to pursue this haphazard course if he chooses to do so, but it is perfectly proper to pronounce such a course quite imprudent, to say the least manifestly indiscreet. But when such a person avails himself of the wonderful facilities of our civilization, the quick mails and express, it is clearly the very thing to do, for a person having some disease which has resisted home skill to apply to a noted specialist who has mainly acquired his celebrity and good reputation through his medical success. With a practice reaching out from his office to all the States and Territories, he can hardly fail to acquire an experience which will enable him to perform what many will regard as miracles. A person having a chronic disease of a difficult character is infinitely better off in the hands of a noted specialist one hundred or one thousand miles away, than he can be under the supervision of one whose time and professional skill is mostly employed in the treatment of a class of ills as little like those of a chronic character as a mule is like a horse or a goat is like a jackass. We therefore say that an invalid who has been suffering for months and perhaps for years with a supposed incurable malady is fully justified, in the light of reason and common sense, in opening communication with one having a wide range of experience in the treatment of such ills.

E. B. FOOTE, M.D.

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In answer to numerous inquiries, Dr. Foote takes this opportunity to inform correspondents that he cannot accommodate patients with board. There are, however, hotels and boarding-houses within a convenient distance, fashionable and expensive, and unfashionable and comparatively cheap, where invalids can obtain accommodations according to their means.

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~~~~~  
*Review of "Plain Home Talk," by the eminent English Physician,  
Essayist, and Reviewer, the late Professor Strauss.*

NEAR the close of September, 1887, a cablegram announced the death of Dr. G. L. M. Strauss, of London, England, a savant well known to scientists and people of literary tastes. The following review of the field of medicine is from an unpublished manuscript received a few years ago by Dr Foote, Sr. It was originally written as a preface to the English edition of "Plain Home Talk, embracing Medical Common Sense." If, as was intended at that time, stereotyped plates had been used in London for the special English edition, the manuscript might have been so used; but, for English publishers, it was decided best to continue to furnish the work in printed sheets, and the length of Professor Strauss's article rendered it hardly suitable for the entire edition printed for use on this as on the other side of the Atlantic. The whole article was printed in the November, 1887, issue of Dr. Foote's *Health Monthly*, and that portion referring directly to this book is such a valued endorsement of it, from an unquestionably competent and high authority, that it is printed herewith as a suffix instead of where a preface belongs.

Professor Strauss wrote:

"In limine, I must crave to explain briefly how I came to volunteer to write this Preface to the new English edition of Dr. Edward B. Foote's 'Plain Home Talk.'

"Up to some thirty months or so ago Dr. Foote was personally unknown to me, nor had I read a line of his books, though I had, indeed, for years past, heard much of him and his great success in his professed Common Sense treatment of an almost all-embracing variety of human ailments. With a pretty long and not altogether uneventful professional career of my own lying behind me, I continue to take a warm interest in all genuine, bona fide progress of the most important of all sciences—Physic.

"But I must confess that my experiences in that noble science, and with its professors and leaders, rather tended to predispose me to look with skeptic suspicion upon all claims and claimants to exceptional success in the treatment of diseases.

"I may conscientiously aver that I have, from an early period of my life, striven hard and with honest endeavors to acquire and practise the beneficent healing art. I have been privileged to sit at the feet of many a reputed Gamaliel of the Æsculapian science. I studied Physic under the great leaders and teachers of the most renowned schools and systems of my time, in Germany as well as in France—and in many a civil and in many a military hospital has the sad opportunity been most profusely offered me to see daily and hourly proof of the hopeless helplessness of the vaunted *ars medendi*, and to find, to my most bitter grief and deepest humiliation, that most of the fancied theoretic lore I had acquired turned out in the crucible of attempted practical application like unto dry bones, sapless chips, withered leaves, and burnt-out ash.

" \* \* \* I was led in the end to forsake the exercise of Physic as an ungrateful occupation, and to take to pursuits less fraught with danger and inconvenience to my fellow-men. Now, with these notions of mine, it was but natural, I think, that, as I have stated at the outset, I should feel rather disposed to look with sceptic suspicion upon all claims and claimants to exceptional success in the treatment of diseases. I must once more observe here that at that time Dr. Foote was personally unknown to me, and that I had never seen a line of his medical writings.

"Now it so fell out that a young friend of mine, who had heard of Dr. Foote, and who had unsuccessfully tried the ministrations of some of our most highly reputed doctors in a delicate case, was induced at last to consult the famous New York physician. I must confess it was not at my suggestion, at least, if not absolutely against my advice, that he did so.

"He showed me the Doctor's letter in reply, and placed in my hands the remedial agents sent over to him from America. Well, the letter and the remedies—powerful agents compressed into the very smallest compass—staggered me considerably. Although an unsuccessful practitioner, if you will, I knew quite enough of my profession to see and understand that this American Doctor was a man who thoroughly knew what he was about, and that his practice was really based upon the great sound principle of Common Sense. My young friend recovered speedily and completely under Dr. Foote's treatment by correspondence. It is a homely old saying that the proof of the pudding is in the eating. Dr. Foote's success in this case impressed me rather favorably; it even led me to advise some other suffering friends of mine to apply to the New York Doctor. The result was equally favorable in every case.

"I now for the first time procured a copy of Dr. Foote's 'Plain Home Talk,' and read it carefully through—indeed, over and over again—and the more and the oftener I perused the Doctor's 'Plain Home Talk' upon Disease and its causes, prevention, and cure, the stronger the impression grew on my mind that here I had met at last with a true healer—an effective redresser of Nature's wrongs. This impression was confirmed and strengthened when I had the much-coveted pleasure of meeting Dr. Foote face to face, and conversing with him exhaustively upon the subject dearest to his heart, and engrossing all his thoughts, faculties, and talents: the relief of human suffering. This was some years ago, upon the occasion of a visit which the Doctor made to the 'old country.'

"It was, in a great measure at least, upon my advice that Dr. Foote decided to publish a special edition of his 'Plain Home Talk' for the use and guidance of Englishmen and Englishwomen—which I now beg leave to introduce to the fair notice of the British Public, fully convinced that all who will read the book with a candid mind and unbiased judgment, and with the honest intention of profiting to the fullest extent by the sage lessons and sound advice upon the most important questions of life and health, so intelligently and exhaustively conveyed in every chapter of the work, will reap a rich reward.

"'Plain Home Talk' may fairly be described as a veritable 'Enchiridion Medicum'; a Compendium of sound advice upon the preservation of health and the proper treatment of every ill and ailment our poor human flesh is heir to, conveyed in plain homely language that addresses itself with straightest directness to the clear intelligence and understanding of all sensible men and women.

"From the first line of the Author's own Preface to the last passus in the book, the work is replete with the very highest sense, Common Sense, to wit, that most desirable commodity which the Author truly—albeit somewhat bitterly perhaps—declares to be held at a discount, especially in the profession of Physic, where everything is proverbially ignored that has not the mustiness and dustiness of antiquity and incomprehensibility to recommend it to the favorable notice of the 'learned.' The Author proceeds to characterize, rather felicitously I think, medical works in general as heterogeneous compounds of vague ideas and equally vague jaw-breaking words, in which the *dead* languages are largely employed to treat of *living* subjects. Progress, says Dr. Foote, is fully admitted to be possible and real in every branch of art and science and human lore—except in Medicine, in which it would appear the beaten old track must be stolidly pursued, although it has been over and over again, even superabundantly, proved and demonstrated to the meanest capacity, that the beaten old track is altogether the wrong road, and leads to perdition. Ay, he who would strike out a new path for himself runs the risk of being dubbed by staid medical orthodoxy an empiric—if not an impudent and ignorant quack! However, the dread of this has clearly no terror for Dr. Foote, who says he is content to bear the vaporizing denunciation of antiquated, unreasoning, and unreasonable Medical Bigotry. He cares not for personal renown or popularity. His chief aspiration is to strive to promote to the best of his ability and power the physical and moral well-being of the great human family. In his 'Plain Home Talk' he has endeavored to give to the world a Medical Work treating with equal thoroughness of *first causes* and *ultimate effects*, and of all intermediate facts and circumstances bearing upon them, and written in language strictly mundane, and comprehensible to all alike.

"Many of the theories which Dr. Foote advances in this work are certainly new, and occasionally rather startling. I must candidly admit that some of his notions do not run on all fours, as the common saying has it, with my own most cherished ideas on the same matters, though I do not think I am fairly open to the taunt of old fogysm. However, as the Doctor avouches that all his views and theories are founded upon close observation and careful experiment, and an extensive successful medical practice, I say over again the proof of the pudding is in the eating, and objections based merely upon divergent theories should not be urged in opposition.

"There is one passage in the Doctor's own Preface to his book in which I go along with the author to the very fullest extent. He says, 'It may sound boastful in a medical man to parade his great success in the practice of his art before the public,' but, he thinks 'it is as fair and proper in him to do so as it is in a military chieftain to flash his achievements on the field of battle, and the long array of orders he has received in reward for his skill and prowess, in the eyes of an admiring and applauding people.' This remark is true to triteness. I go further—I maintain that as by universal assent it is so much more honorable, and certainly so much more beneficial to mankind, to fight fell death and combat feller disease, and prevent loss of limb, and restore the maimed and lamed to power and action, than to slay and slash—the true healer has so much more reason to exhibit his sign-board, as dear Artemus used to have it; nay, it seems to be his bounden duty to his suffering fellow-men to do this, that they may know where to apply for relief.

"In conclusion I have to say a few words on a delicate subject which requires delicate handling.

"Dr. Foote in his 'Plain Home Talk' treats of all parts, organs, and functions of the human body alike, and of the derangements to which they are liable—which surely, to any man of plain understanding and average intellect, would seem to be the only Common Sense way in a professedly medical work on the preservation of health, and the prevention and cure of diseases.

"There are two sets of organs and functions in the human body—the one devoted more especially to the preservation of the individual, the other more exclusively to the preservation of the species. Both sets are equally important, one would think, or if there be a difference of degree, it surely must be held to preponderate on the side of the latter. Yet, strange to say perhaps, a somewhat tyrannical custom, based upon spurious shamefacedness, or an overwrought sense of innate modesty, has, to a great extent at least, placed all allusions to things more or less immediately connected with this latter set under a kind of social taboo. I know this is treading on dangerous ground. I will therefore content myself here with referring the reader of 'Plain Home Talk' to Dr. Foote's reasons, as stated in his own preface, why he has made no marked distinction in his book between the treatment severally of the two sets. I may perhaps be permitted, however, to append a single remark:

"Parents living in a city with dirty and dangerous back-slums in and about it, will, if endowed with an ordinary share of Common Sense, surely endeavor to the best of their ability to instruct their children, who may at some time or other have to pass through such objectionable places, as to their nature, and to warn them against the danger lurking in them. Yet will they, from mistaken delicacy and shame, send forth their children on their way through the infinitely more dangerous back-slums of life, without instruction, without warning."

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*A Physician of a Broad Education writes from Hambrook Court, England.*

"DEAR SIR: I was in Bristol a few days ago, and when at a bookstall I saw your remarkable book entitled 'Plain Home Talk,' I began to read, but could not put down the book till it was read through. Although a hard student for fifty years, I have met with much that was new, startling, and very instructive. If every adult in the civilized world could read, understand, and would follow out your views, in a few generations there would be a world of physical, intellectual, and moral giants. Your work is priceless in value and calculated to regenerate society.

"If there is anything you think I should like to have in tract-form, please send it. I have lately retired from practice, and am ready for anything in advance. Believe me, fraternally yours, S. EADON, M.A., M.D., Ph.D., F.S.A., Grad. of Med. of Edinburgh, Glasgow, and Aberdeen."

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*A Physician's Honest Opinion.*

PHILADELPHIA, PA.

"DEAR SIR: I have carefully read your book 'Plain Home Talk and Medical Common Sense,' and as I am myself a physician, and also have given a good deal of attention to social science and kindred studies, I feel competent to judge of it. I was strongly prejudiced against all publications of the kind I thought this to be. But now I must, as an honest man, say to you that your book is an able, honest, and truthful presentation of facts and theories, and calculated to do much good. I thank you for it. You may use this letter, as I mean what I say and am not ashamed to say it.

Your obedient servant,

LOUIS SETNOUR."

**Testimonials to "Plain Home Talk"  
from Physicians, Clergymen, Teachers, etc. etc.,  
in all Parts of the World.**

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"It is plain, concise, and truly wonderful in all that it contains. As a medical student I find this work of yours more valuable than many of my text-books.

"J. M. CROCKER, Washington, D. C."

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*A Voice from South America.*

"Due attention to its teachings will do incalculable good in this region where sexual diseases are unfortunately prevalent to a large extent.

"Dr. H. B. OGLIVIE, Bocas del Toro, Republic of Colombia."

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"A French Catholic Priest in St. Croix, N. S."

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"WALTER E. STUDE, Attorney-at-Law, Butler, Ga."

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"W. M. SEAMAN, Principal of School, Williamsburg, Kansas."

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"JULIA MANSER, Norfolk, England."

*Counsellor for the Family.*

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"Yours truly, D. D. DAVIES, M.D., Slatington, Pa."

*From a Physician in Bombay, India.*

"It is to be regretted that you are at a distance of 5,000 miles from us, separated by vast oceans, and hence the only chance of consulting such a great specialist like yourself is only by letters. First of all I borrowed your book from a friend of mine, read it and studied it, and the impression made on my mind was such that I was not satisfied till I bought the book as my own. Now not a day passes when I do not read some portion of it. I have much benefited myself and my patients by following the dictates mentioned therein. Let me know if I can be of service to you here. Wishing you a long life, I remain,

"Yours ever truly, I. K. THAKORE, P.P.G.M.C."

*An Italian Physician's Appreciation of "Plain Home Talk."*

"I have studied philosophy and medicine—about medicine I have studied various systems in various countries. I have investigated the allopath or orthodox schools as well as the newer ones. I studied anatomy under Hyrtl, physiology under Weber, chemistry under Pasteur. I got my degree of Ph.D. and M.D. from the University of Padua (Italy) and lastly I studied for two full courses of medicine again at Bellevue Hospital Medical College, but to say the truth none of all these systems has satisfied me, until per curiosity I happened to read your book of medicine entitled, 'Medical Common Sense.' Common sense, indeed, that is what we want, and for what I have searched for a good many years in the profession as well as in medical literature, but your book, although written for the non-professional public, opens a large field of investigation to the astute and real physician. If instead of the old-fashioned professional text-books your book of 'Common Sense' could be a text-book, what a fairer and better result we would have from our colleges. Yes, Doctor, your book should be our standard book.

"Respectfully yours, DR. ADOLFO LURIA."

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"I am a student of the fourth year in the Toronto School of Medicine. A few weeks ago, I came across your book 'Plain Home Talk,' and have read it with much pleasure and profit. Such a book should be in the hands of all medical students.

"Yours very faithfully, WM. S. HERON, Toronto, Canada."

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"Yours truly, H. S. KAVARANA, Canton, China."



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"Yours truly, E. PITCHER, M.D."

*From a Magistrate in India.*

"Your 'Plain Home Talk' has been of great use to me and has done me a deal of good. The benefit you have conferred on society by the publication of the book is inconceivable and immeasurable. It has gone a great way in dispelling some of the mistaken notions prevalent even amongst the educated classes in this country.

"Yours truly, N. K. GHOSH, Serampore, Bengal, India."

*Preaches Gospel of the Body.*

"I have read your book on 'Plain Home Talk' and am charmed with it. It has replenished me with facts which I never dreamed of before, and I judge the book as a real blessing to humanity. My profession being one that brings me in contact with many people of all classes and states, I will do my best to help as many people as I can by lending the book to them or induce them to secure your literature, for I believe you preach the gospel of the body, second only to (in importance), and a supplement to the Gospel of the Soul which we preach.

"Yours truly, REV. S. L. TESTA, Brooklyn, N. Y."

*What a Reverend and Editor says.*

"I want three of your books. One to place on a table in my waiting-room and the other two I wish to give to my two oldest children. I wish every parent would follow my example in this. We want to educate the coming generations entirely different from the present. Yours truly,

"IMMANUEL PFRIFFER, Pittsfield, Mass."

*From a Medical Student.*

"Having carefully read your book, 'Plain Home Talk,' I don't hesitate to say, that I consider it one of the best books of the kind I have ever examined. I take pleasure in recommending it to the public as a safe and reliable guide. Your essays on the most common diseases of Man and Woman, their symptoms, prevention, etc., are set forth in such a clear and easy manner that any person with ordinary intelligence can readily diagnose his own case correctly.

"Yours truly, F. S. DYSART, Harrisville, Ohio."

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"Yours respectfully, G. KUHNERT, Sharon, Wis."

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Yours very sincerely,

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"Yours, etc., GEO. K. BROWN, Dobson, New Zealand."

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"I think it is a book that should be in every household, and that every person who is contemplating marriage should read and study it thoroughly before they take the step, and always keep it handy after that principal point of life has been passed. I think if the people of this world would go by the teachings of this book, they would be much happier and healthier.

"Yours very truly, J. D. M. CROCKWELL, Salt Lake City, Utah."

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"Having recently received a copy of 'Plain Home Talk,' am surprised to find the book to far exceed my expectations. I have several books of a similar character, but yours exceeds them all.

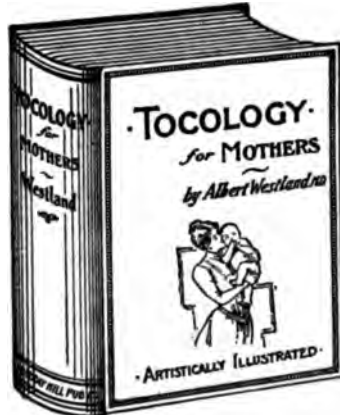
"Yours, J. H. BRUBAKER, Bladensburg, Ohio."

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"Part of my vacation is being spent in the perusal of your book, 'Plain Home Talk,' and I am sure my leisure could not be more pleasantly and profitably spent. I wish the doctors would teach common sense as you do and insist upon patients educating and doing for themselves, for therein lies their salvation of body and soul.

Yours cordially,

"HELEN G. SMITH, Boston, Mass."



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